MARCH 23, 1946

Railway Age

Founded in 1856

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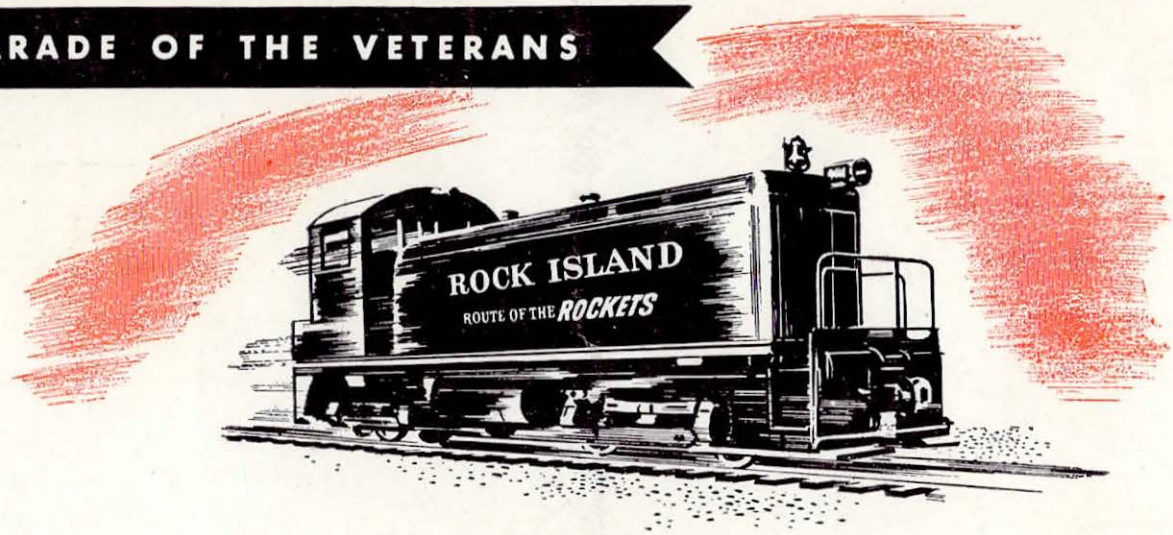
1946 PARADE OF THE VETERANS



GM Switchers Also Rate Where HOURS Make The Veteran

A fleet of 37 General Motors Diesel switchers on the Chicago, Rock Island and Pacific—put in service at various times during the past eight years—have worked an average of

636 hours per month

With such a record there can be no doubt about their status as *veterans.*

The total number of hours worked by all 37 switchers during this eight-year period was 1,862,965 at an average availability of

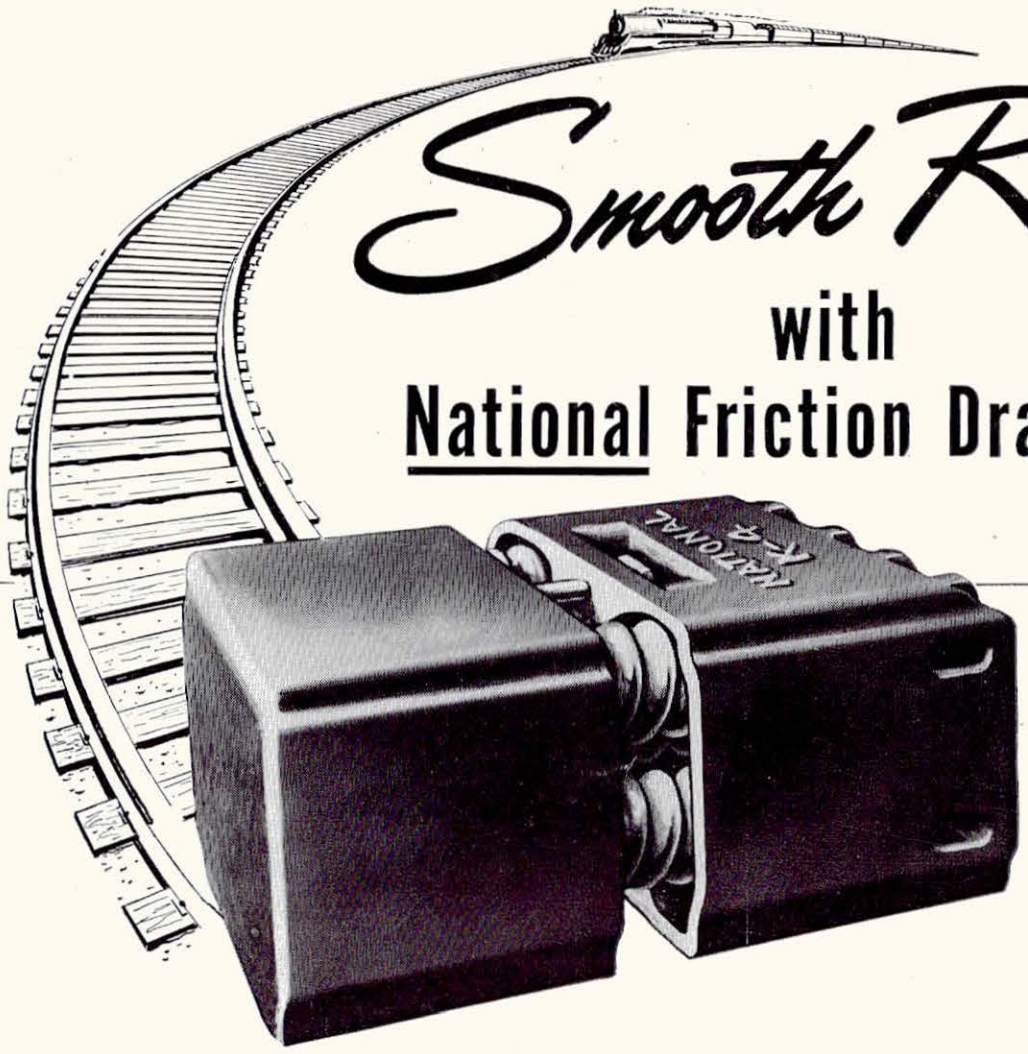
95.8%

They surely are entitled to a place alongside the scores of General Motors Diesel passenger locomotives which have been rolling up million-mile records on railroads from coast to coast.

YOUTHFUL IN STAYING POWER
VETERANS FOR PERFORMANCE

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION
GENERAL MOTORS CORPORATION LA GRANGE, ILL.



Smooth Riding with National Friction Draft Gear

For improved comfort and smooth riding of high-speed passenger cars, National Friction Draft Gear—Type K-4—has been well-tested and proved. Its application is especially valuable for crew comfort in cabooses.

The gear combines coiled spring and friction resistance—the former to smooth out pulsations of the locomotive draw-bar pull, and the latter to absorb occasional heavy impacts. The spring action blends into the friction resistance at any required time and from any position of compression or release, to afford the maximum of smooth, comfortable riding.

Type K-4 gears are made of Naco Steel, each part heat-treated, with case-hardened friction surfaces where needed. And of course, every gear is subjected to National Malleable's quality control processes to meet rigid inspection and performance tests.

These friction draft gears are typical examples of the advanced engineering which for 77 years has been built into every National Malleable product for the improvement of railroad service.

EST. M&S Co. 1868

NATIONAL MALLEABLE
& STEEL CASTINGS COMPANY
Cleveland, Ohio

Sales Offices: NEW YORK, PHILADELPHIA, CHICAGO, RICHMOND, ST. LOUIS, SAN FRANCISCO.
Works: CLEVELAND, CHICAGO, INDIANAPOLIS, SHARON, PA., MELROSE PARK, ILLINOIS.

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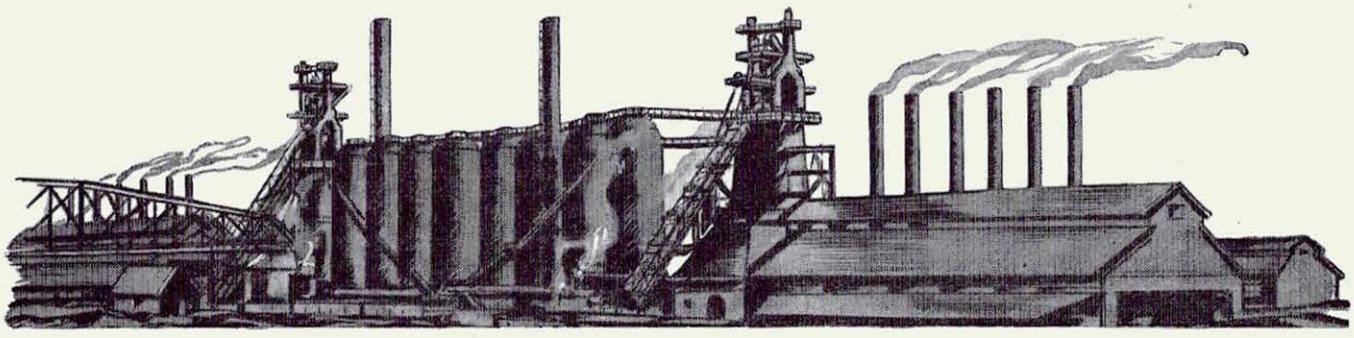


Supplying Steel

Is Only Part of Our Service

Cooperating to get the ultimate in ductility, hardness or a special balance of these properties for a specific purpose; or aiding in the solution of a perplexing problem of fabrication which might otherwise prove costly, is also part of Inland service.

From broad contacts with users in many fields our engineers and metallurgists can often furnish or suggest the answers to puzzling situations. Or our research laboratories, while constantly seeking new and better steels, may have already developed the exact type of sheet, plate or other steel product that will meet your requirements.

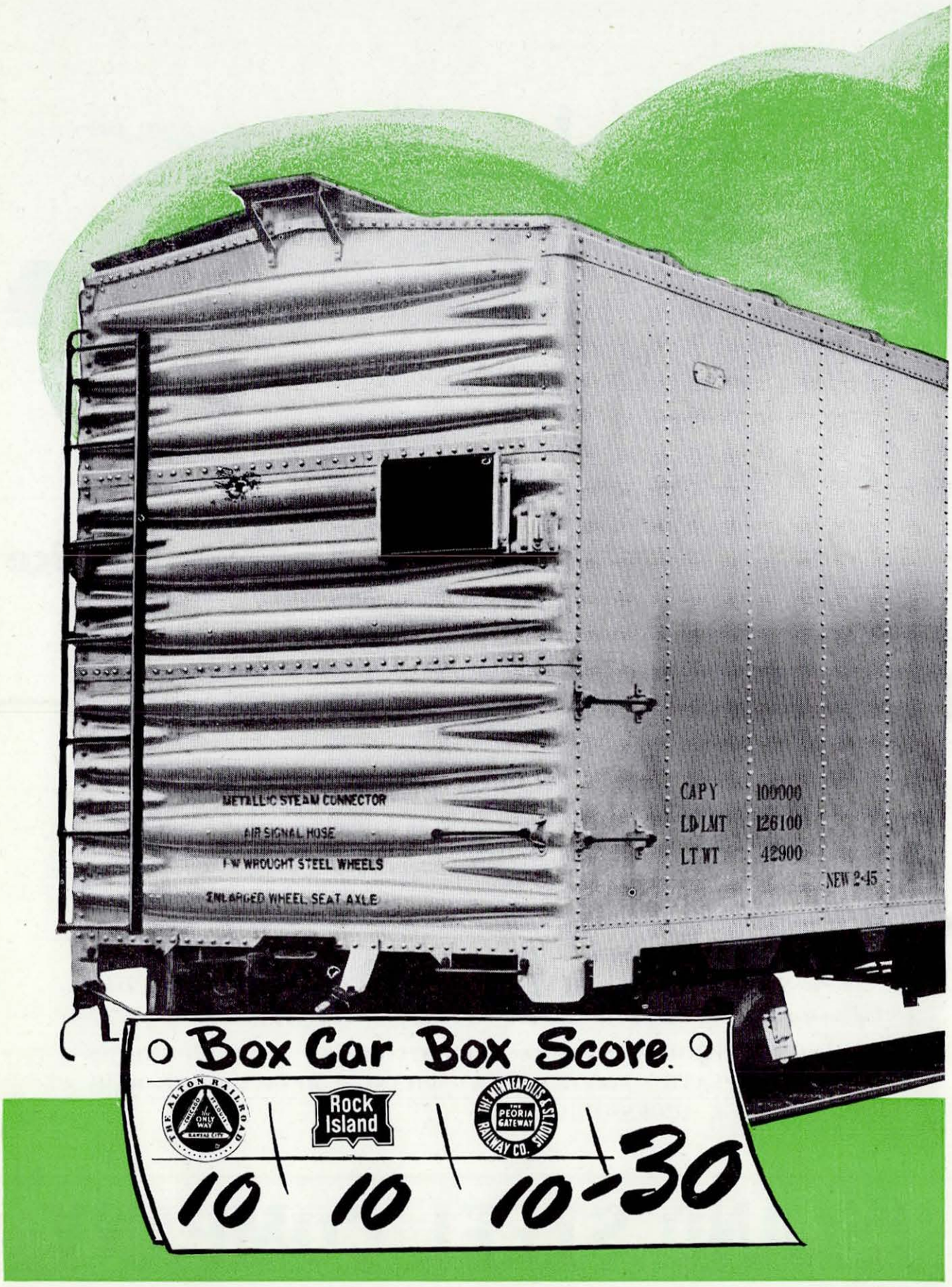
No matter how difficult or exacting the specifications, you can always depend on the closest cooperation and teamwork from Inland. Our staff of specialists backed by modern plants operating under rigid standards and efficient scheduling, assure processors, fabricators and users the greatest dependability from steel.

Inland Steel Co., 38 S. Dearborn St., Chicago 3, Ill., Sales Offices: Cincinnati, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Paul, St. Louis.

PRINCIPAL PRODUCTS: BARS • STRUCTURALS • PLATES • SHEETS • STRIP • TIN PLATE • FLOOR PLATE • PILING • REINFORCING BARS • RAILS • TRACK ACCESSORIES.

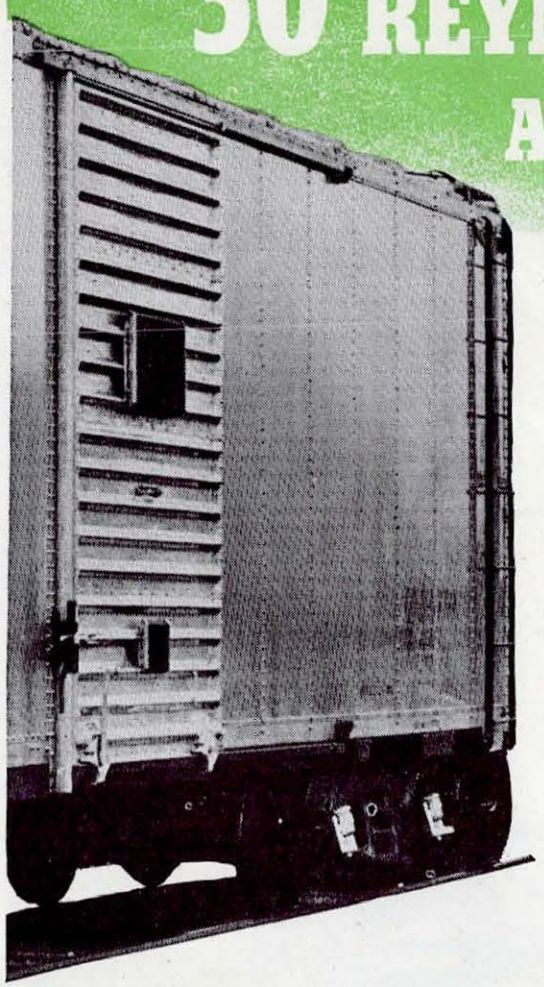
INLAND STEEL COMPANY

How UP-TO-DATE are you on ALUMINUM?



Greater Payload - Faster Speed!

30 REYNOLDS DESIGNED Aluminum Box Cars



THIRTY gleaming answers to the questions of more payload per train . . . higher freight speeds . . . are rolling the rails today all over the country.

They are the thirty Reynolds-designed, A.A.R. approved aluminum box cars in use by three Class I Railroads—and they offer revolutionary new advantages in meeting postwar freight problems.

Up to 10,000 lbs. of weight saved . . . increased load capacity . . . reduced fuel costs for train and switching service . . . high corrosion-resistance cuts maintenance costs . . . and when equipped with A. A. R. trucks can be cut into trains with speed in excess of 85 miles per hour.

Great alloys developed by Reynolds to add lightness and strength to our warplanes, today make practicable improved cars for *all* types of rolling stock, including Reynolds-designed, 50-ton, 3-Hopper cars; "Day-Night" passenger coaches. Right now a Reynolds-designed refrigerator car is being built . . . railroads are invited to watch for a special announcement.

Reynolds welcomes inquiries. Blueprints available. Write Reynolds Metals Co., Railway Supply Division, 310 So. Michigan Boulevard, Chicago 4, Illinois.

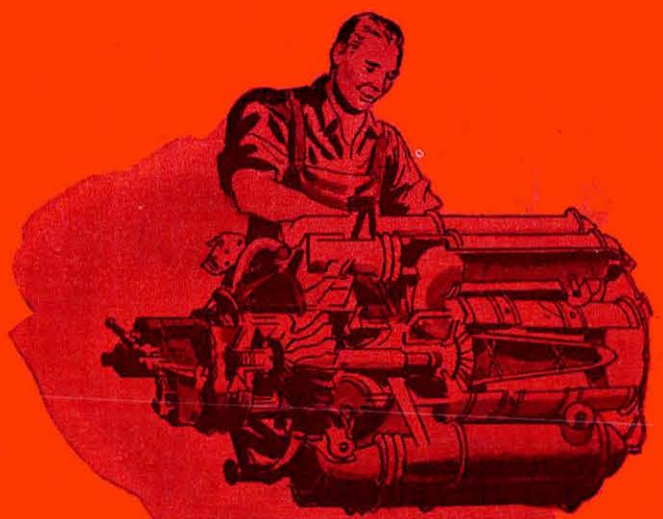
109-A5-2

REYNOLDS METALS

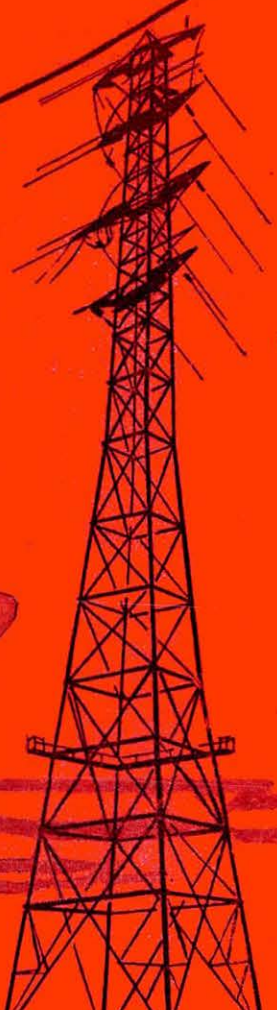
REYNOLDS ALUMINUM

The Great New Source of

INGOT · SHEET · SHAPES · WIRE · ROD · BAR · TUBING · PARTS · FORGINGS · CASTINGS · FOIL · POWDER



IN THE MANUFACTURE OF MACHINERY, APPLIANCES . . . . IN THE ERECTION OF STEEL OR TIMBER STRUCTURES . . . .



DURABILITY and SECURITY

are yours with

INDUSTRIAL FASTENERS

BOLTS, NUTS, SCREWS, RIVETS

There is a mass of research and test data on bolted and riveted joints available to engineering designers that provides information you need for designing the joints and connections of any appliance or structure—from a toaster to a skyscraper. When you use Industrial Fasteners, you know that you can depend absolutely upon their time-tested properties.

Likewise, experience has shown that you can count upon the uniformity and reliability of the products made by the fasteners industry under today's precision manufacturing methods. And in addition, the wide variety of standard and specially-shaped items assures exact conformity to your needs. Interchangeability of parts simplifies assembly and servicing problems.

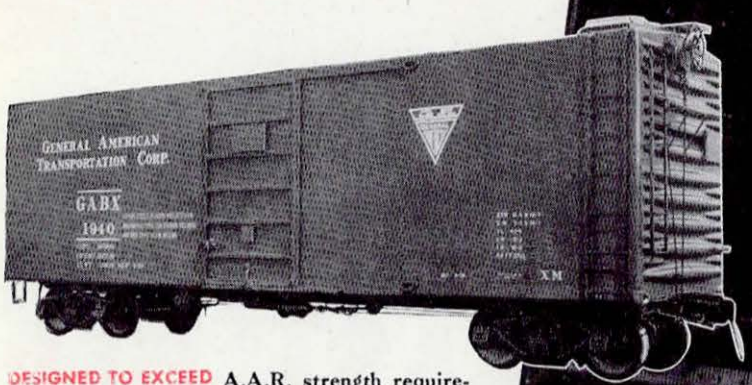
Use the *known properties* and *dependable security* of Industrial Fasteners to make your products or structures strong and reliable. Ask your supplier.

AMERICAN INSTITUTE OF BOLT, NUT AND RIVET MANUFACTURERS

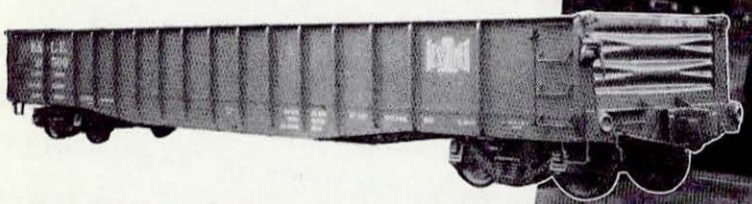
1550 HANNA BUILDING • CLEVELAND 15, OHIO

Because of its fine performance in every type of freight car . . .

"COR-TEN Equipment" HAS COME TO MEAN



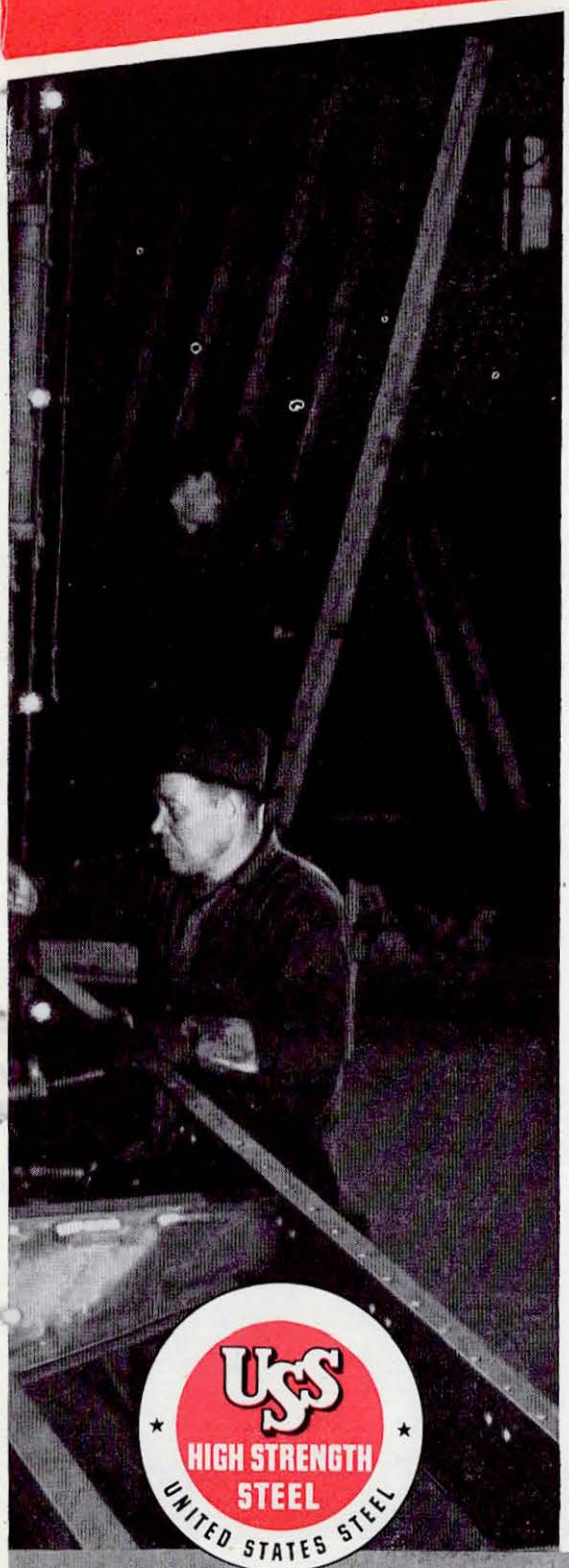
DESIGNED TO EXCEED A.A.R. strength requirements, this all-fusion welded 50-ton box car designed and built by General American Transportation Corporation weighs 8,500 lb. less. Roofs, sides, ends, doors and underframe with exception of center sill are of U·S·S COR-TEN.



BUILT OF U·S·S COR-TEN for maximum strength and stamina—yet 900 lb. lighter, these 500, 50-ton gondolas built by the Greenville Steel Car Co. weigh 46,800 lb. each, have capacity of 1,431 cu. ft.

BUILT IN 1937, U·S·S COR-TEN body sheets and plates saved 3,300 lb. in 500 of these 70-ton hopper cars built by the Pressed Steel Car Company.

"the best in lightweight construction"



In 1934 the first lightweight steel freight car was put into service. In this car, a 50-ton hopper, U·S·S Cor-Ten used in the body made possible a saving of 12,185 lb. weight over conventional construction—increased to 81½% the ratio of revenue load to gross load. It marked the beginning of a new era in freight car construction.

Since then a total of 65,273 freight cars—hoppers, box cars, gondolas and refrigerators—built substantially lighter with U·S·S Cor-Ten have been put into service: 62,001 by 47 American railroads and private car owners; 3,272 by foreign roads in various parts of the world.

The record of performance accumulated during the past eleven years attests to the highly satisfactory service these lighter cars have given, has fully demonstrated their long lasting qualities. Every claim initially made for Cor-Ten as a car material has been substantiated and in many cases exceeded by this equipment.

Even under the heavier loading, longer hauls, increased speeds and continuous service demanded by the war, these Cor-Ten cars have stood up magnificently. They have proved conclusively that *lightweight freight equipment of the right design and construction will increase payload capacity, will reduce operating costs, will not increase maintenance, and involves no loss of stamina, serviceability or life.*

As you plan to replace your obsolescent, worn-out and patched-up freight equipment, plan to take advantage of the proved economies, the greater efficiency that Cor-Ten construction offers. Our engineers can place at your disposal an unequalled experience in the application of high-strength, low-alloy steels to freight car construction that cannot fail to be helpful. We welcome the opportunity to work with you.

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
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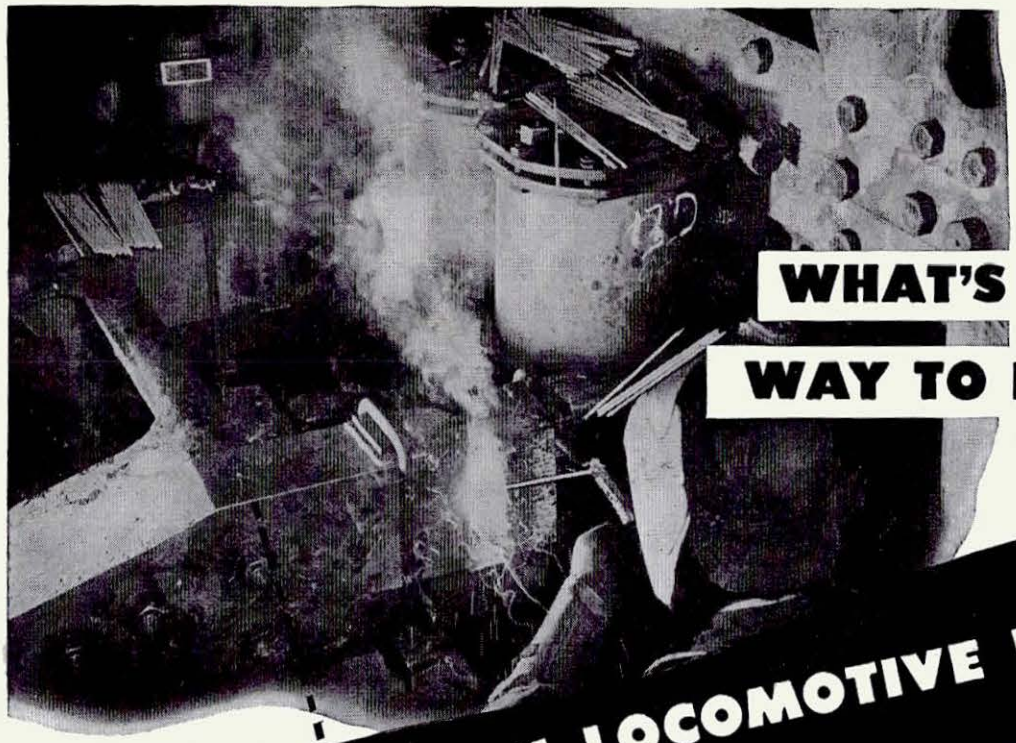
UNITED STATES STEEL



WHAT'S THE BEST WAY TO REPAIR A BROKEN LOCOMOTIVE FRAME?

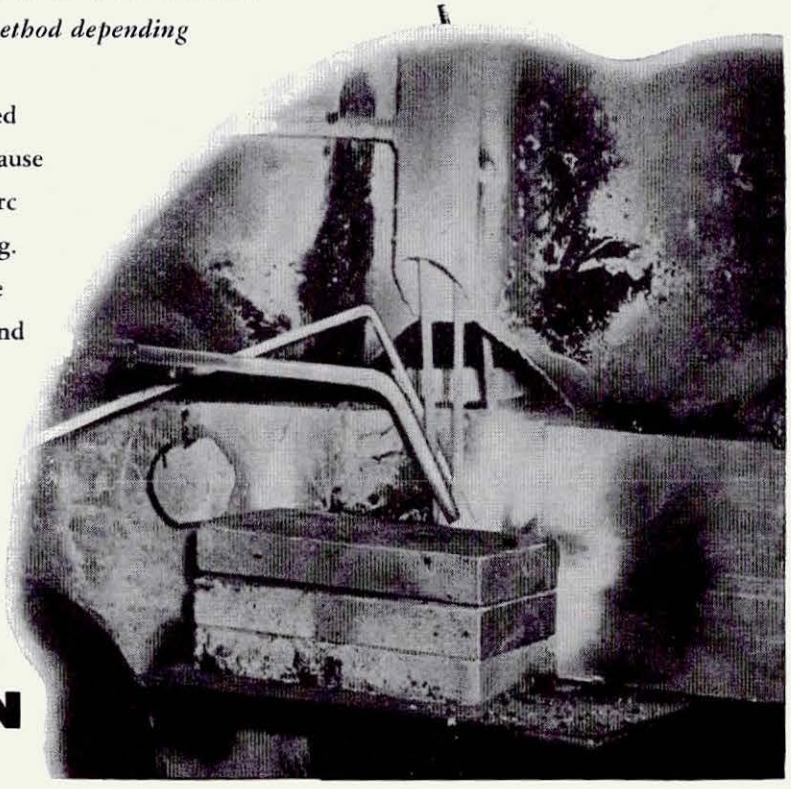
Costs come down under the Airco Plan

Gas Welding? Arc Welding? Brazing?

Airco technical men have supervised many locomotive frame repair jobs, using all three processes. They have observed costs and results. Based on this experience and extensive experimental work in Airco laboratories, they are in a position to recommend the one best method depending on the location and nature of the break.

Airco technical representatives can make unbiased recommendations for all types of railroad work because Airco makes and sells equipment and supplies for arc welding as well as oxyacetylene welding and brazing.

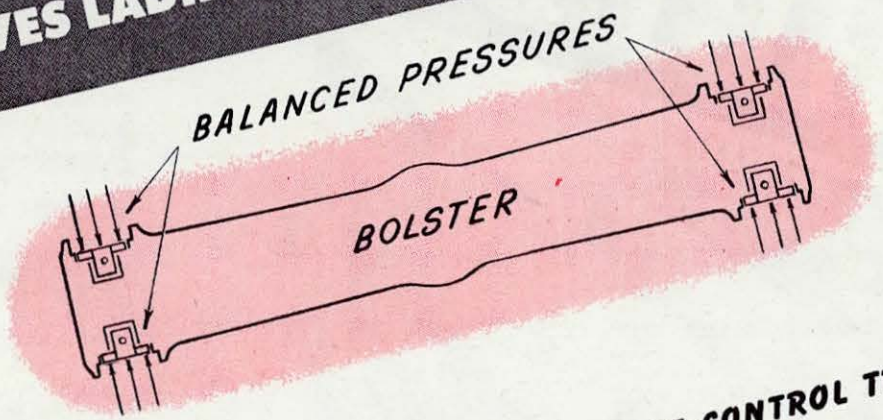
For details ask your nearest Airco office, or write Dept. RA, Air Reduction, General Offices: 60 E. 42nd Street, New York 17, N. Y. In Texas: Magnolia Airco Gas Products Co., Houston 1, Texas.



AIRCO AIR REDUCTION

Offices in All Principal Cities

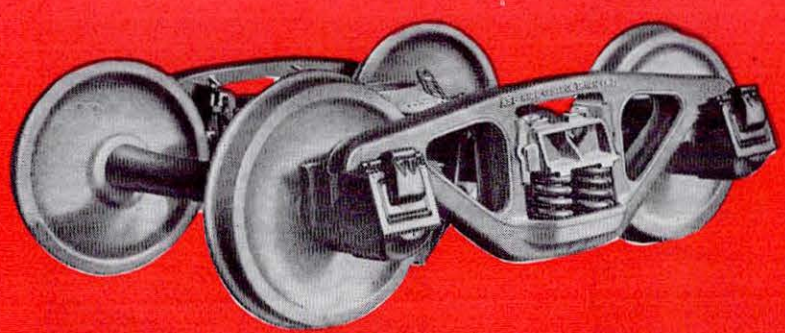
GIVES LADING AN *Easy Ride!*



ACTUATING SPRINGS IN THE A.S.F. RIDE-CONTROL TRUCK DO MORE THAN PROVIDE THE UNIFORM DAMPING FRICTION THAT GIVES LADING SUCH AN EASY RIDE. THESE BALANCED PRESSURES AT EACH END OF THE BOLSTER RESIST MISALIGNING FORCES—ACT AUTOMATICALLY TO "SQUARE" THE TRUCK ON STRAIGHTAWAYS—PROVIDE IDEAL TRACKING CHARACTERISTICS.

Over 19,000 sets of this modern freight car truck are already in service or on order by 48 railroads or private car owners.

MINT-MARK OF ● FINE CAST STEEL



A·S·F *Ride-Control* TRUCK (A-3)

NO SPRING PLATES—NO SPRING PLANKS

LONG SPRING TRAVEL · CONSTANT FRICTION CONTROL

AMERICAN STEEL FOUNDRIES

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PASSENGER COMFORT

In the tremendous building program of new passenger cars FABREEKA will contribute to the greatly increased passenger comfort which is the keynote of modern transportation . . . Fabreeka absorbs heavy impact shock, isolates transmitted vibration, reduces noise . . . puts more pleasure per mile into travel by rail.

FABREEKA PRODUCTS COMPANY, INC.

BOSTON 10, MASSACHUSETTS

FABREEKA
Equipped
Means Lower Maintenance Costs and a High Safety Factor
Used in RAILWAY PASSENGER CARS, Trucks and Platforms . . . LOCOMOTIVES, Steam and Diesel Electric . . . TRACK CONSTRUCTION, on Bridges, Crossings, Curves, Turntables and Track Scales.

B&O BEATS "SMOG"

IN NEWCASTLE, PA. "HUMP YARD"

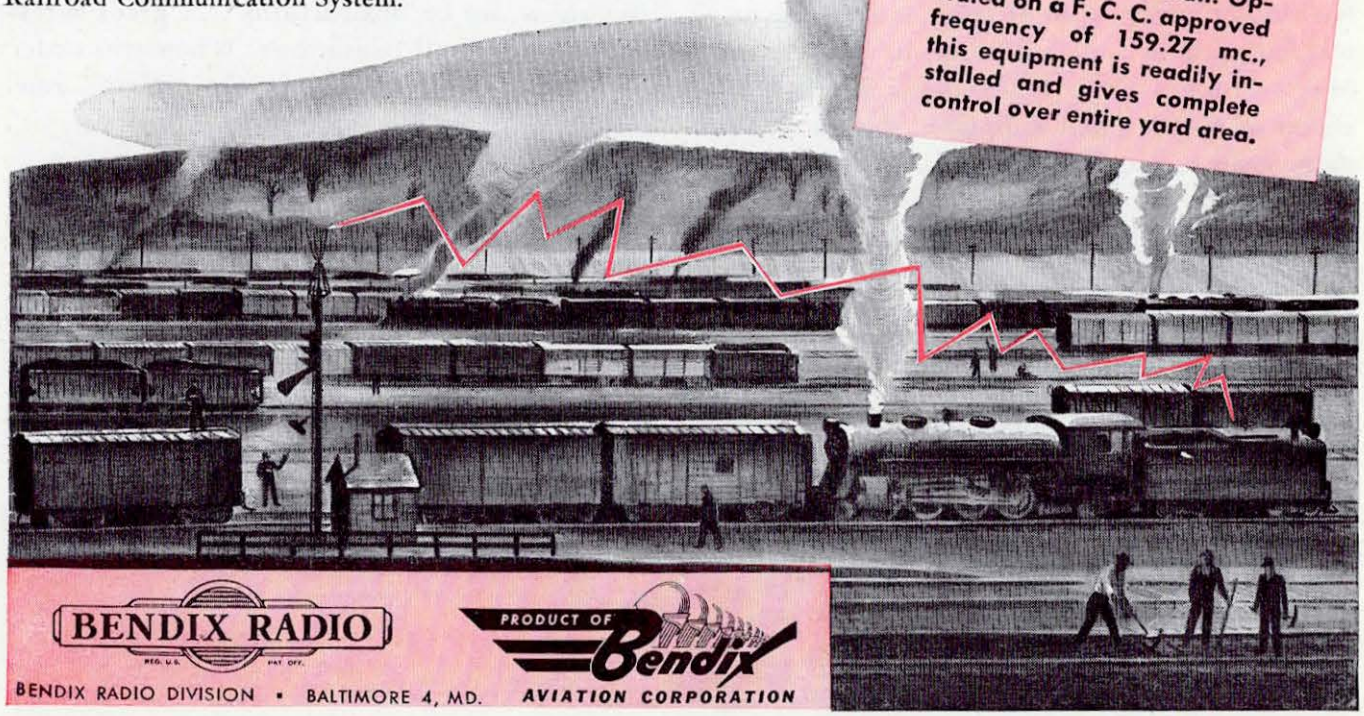
SMOG is licked—beaten by Bendix V. H. F. Radio! With this modern train communication system, smoke and fog or drizzle become only nuisances rather than dangerous drawbacks to fast, efficient railroading.

Located in a heavy fog area, The Baltimore and Ohio hump yard at New Castle, Pa., is "smog bound" about 200 days of the year. Humping and classification services are hampered by enginemen's inability to discern hand or light signals. Through the recent permanent installation of Bendix V. H. F. two-way space radio, the B & O has proved that operational speed is increased through direct voice communication between engineer and humpmaster. Direct person-to-person instructions have proved to be *the answer* to poor visibility.

In addition, complete communication facilities permit instant arrangement of yard pick-ups and, in yard transfer operations, the dispatching of locomotives, while on the move, without call-ins.

Creatively engineered by Bendix, pioneer of V. H. F. Railroad Radio, this integrated communication system is just as efficient for end-to-end and wayside-to-train. Independent of wayside wires, complete communication facilities are obtained without expensive duplication of equipment or specialized installations. For full details write for "An Integrated Railroad Communication System."

Control of breaking up, humping and classifying B&O westbound freight trains is handled from this New Castle, Pa. hump shanty. Operator uses a Bendix MT-107A microphone to contact enginemen and receives acknowledgement through an MI-34A loudspeaker shown on wall. Operated on a F. C. C. approved frequency of 159.27 mc., this equipment is readily installed and gives complete control over entire yard area.



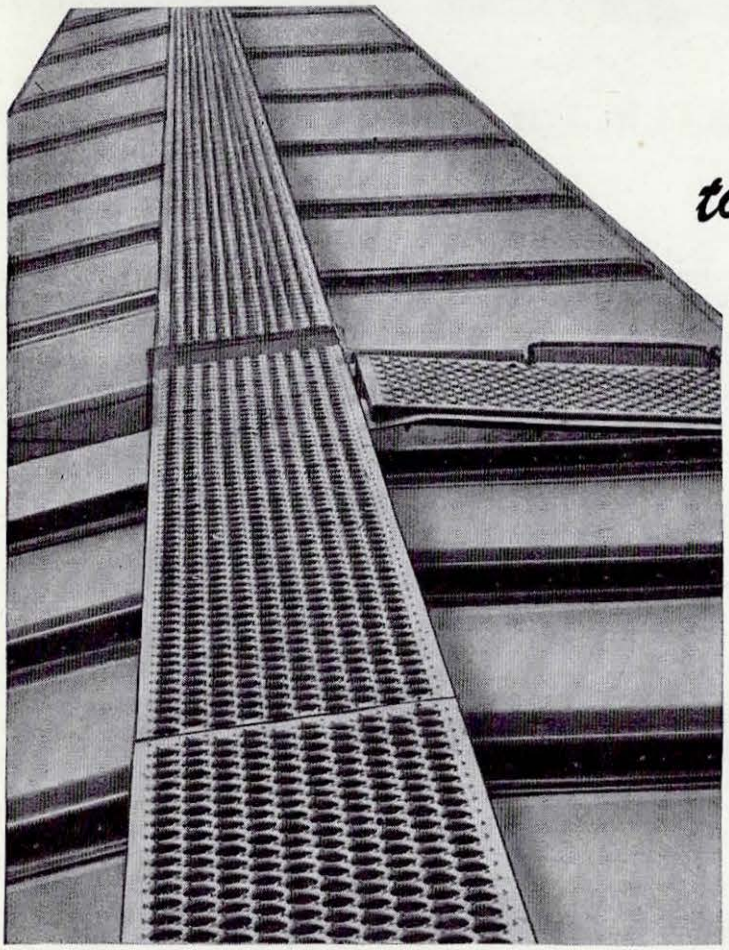
BENDIX RADIO

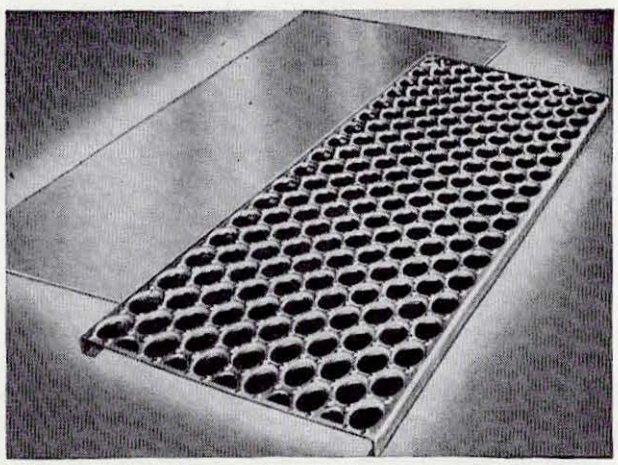
PRODUCT OF Bendix AVIATION CORPORATION

BENDIX RADIO DIVISION • BALTIMORE 4, MD.

MORTON "OPEN-GRIP" METAL RUNNING BOARDS

The Path to Low Repair Bills





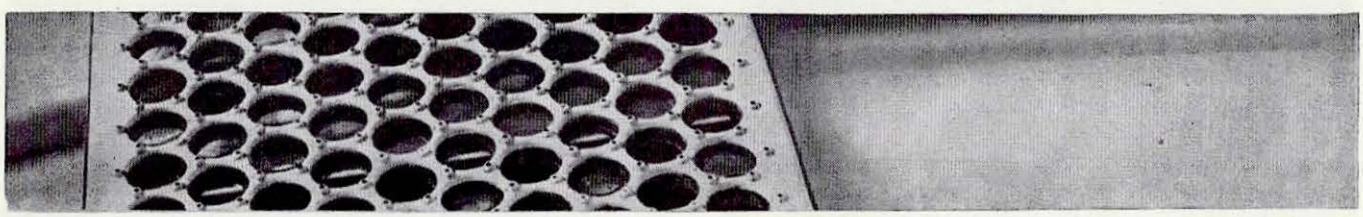
One-Piece Metal Construction
Formed from solid sheets of metal, Morton "Open-Grip" running boards are designed to avoid precision work and loss of time in the fitting or matching of application holes. They are installed with a simple cup device and self-locking bolt.

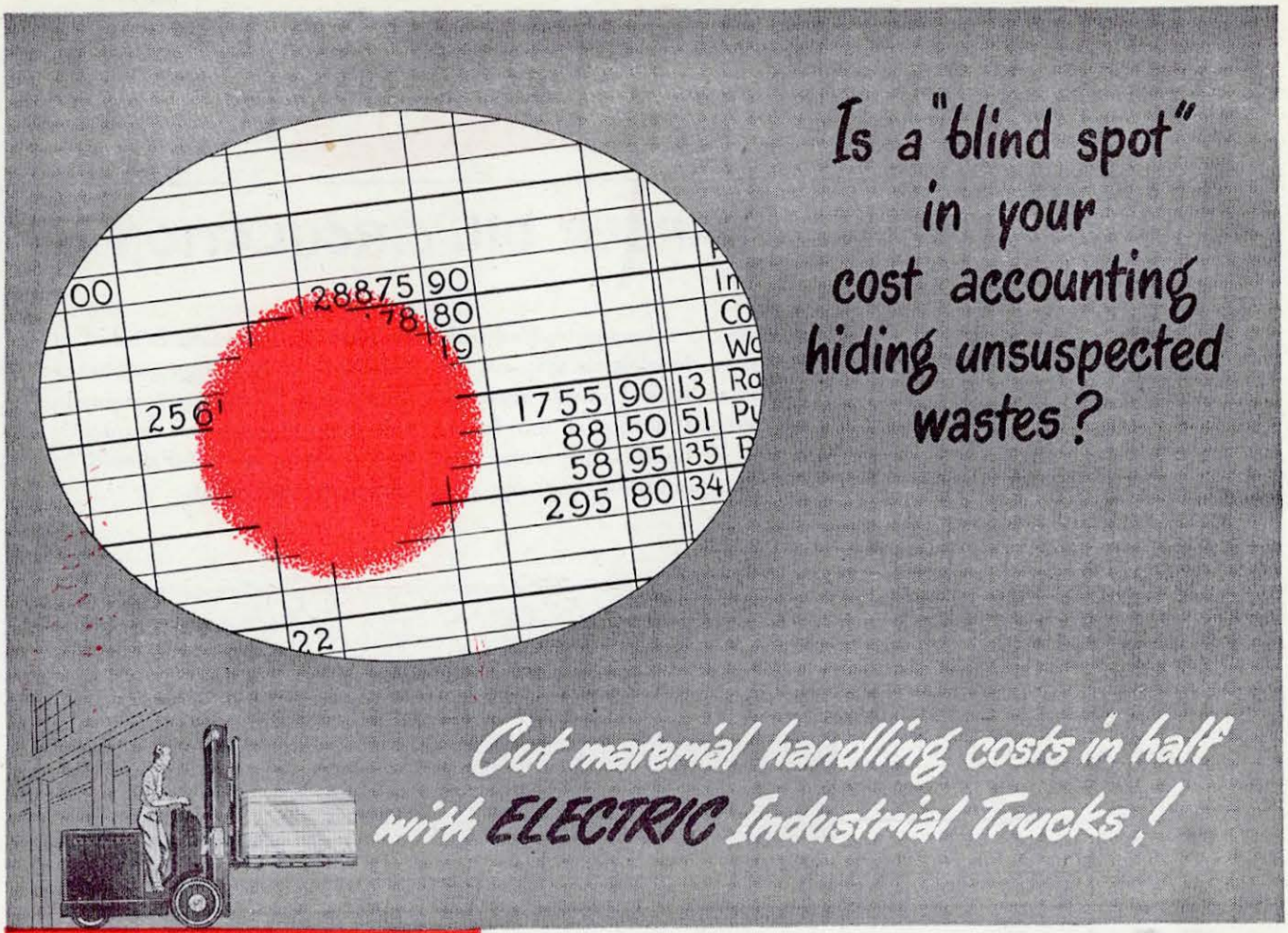
Simplicity in Design Means Economy in Maintenance

No wood to warp, split or splinter . . . no rivets, welded parts or fastened pieces to work loose. Morton running boards are stamped from solid sheets of metal. Their simplified design makes them easy and quick to install, and thrifty in upkeep. You can lay one of these safety-tread runways of steel in as little time as it takes to tighten a few bolts, without special tools, drilling, or cutting and fitting of parts.

Replace unsafe running boards with Morton "Open-Grip" runways which feature the famous non-slip Kass Tread safety surface. Can't collect snow, ice or obstructions . . . gives surest footing under all conditions. When you order new cars, specify Morton "Open-Grip" runways. Write for full information.

MORTON
MANUFACTURING COMPANY
5105 West Lake Street, Chicago 44, Ill.
District Sales Offices: New York • St. Louis • St. Paul Washington • San Francisco • Louisville • Montreal




Is a "blind spot" in your cost accounting hiding unsuspected wastes?
Cut material handling costs in half with ELECTRIC Industrial Trucks!

Most for your money with electric industrial trucks because of these performance features:

Inherently dependable
Built for long, hard service
Provide maximum safety—best working conditions
Fast handling and accurate spotting
Effective use of lowest cost power
Records prove lowest overall cost
Used in every industry

HIGHEST EARNINGS—
GREATEST SAVINGS

Send for these BOOKLETS

As practical aids to management in locating and correcting wasteful methods, we offer two illustrated booklets—MATERIAL HANDLING HANDBOOK and UNIT LOADS. Write us for free copies.

A major cost factor in most industries is the handling of goods —unloading—lifting—moving—placing—stacking—loading—again and again from receiving to shipping. Handling and storing consume at least 70% of the total time spent by materials in the average plant. Here is a prolific source of wastes—and potential savings.

Do *you know* your own material handling costs per unit or per ton of output? They may point to startling inefficiencies in the use of time, manpower and investment. Needless handling—that so easily goes unrecognized—costs money, wastes space and adds not a cent to the value of the finished product.

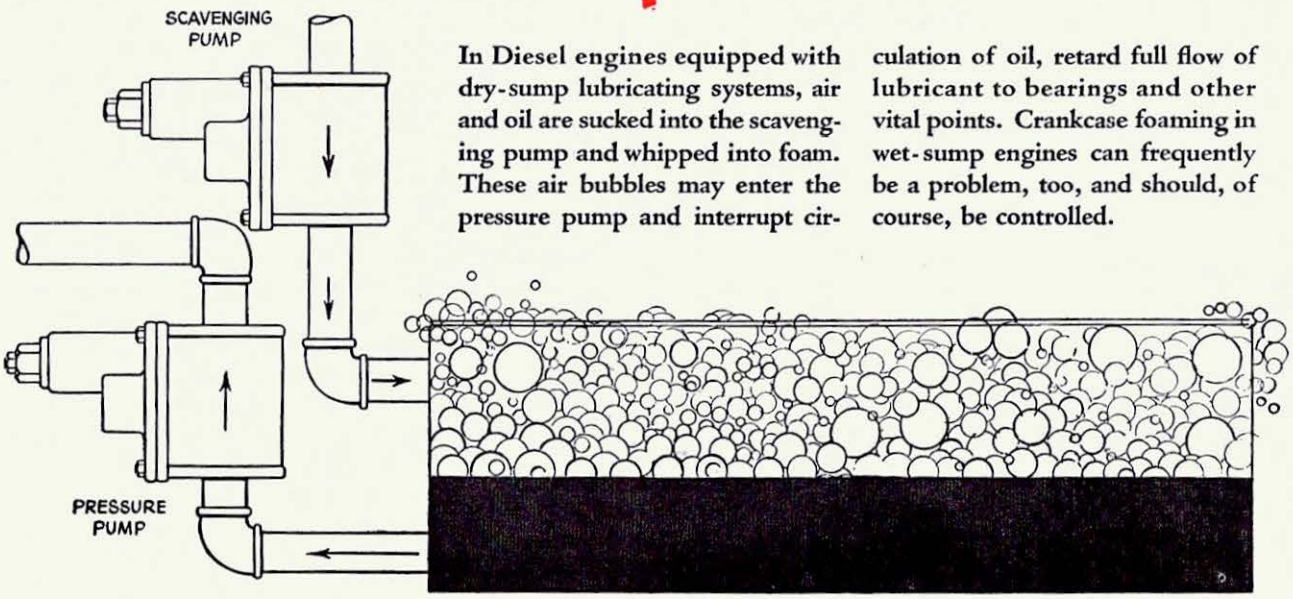
New methods, using efficiently planned loads and sturdy *electric self-loading industrial trucks* are cutting handling costs—often more than half—through multiplying the worker's capacity from 5 to 25 times. That is why we say to cost-conscious management—"When you check your handling costs, you'll standardize on *electric* industrial trucks."

The Electric Industrial Truck Association

208A SOUTH LA SALLE STREET; CHICAGO 4, ILLINOIS

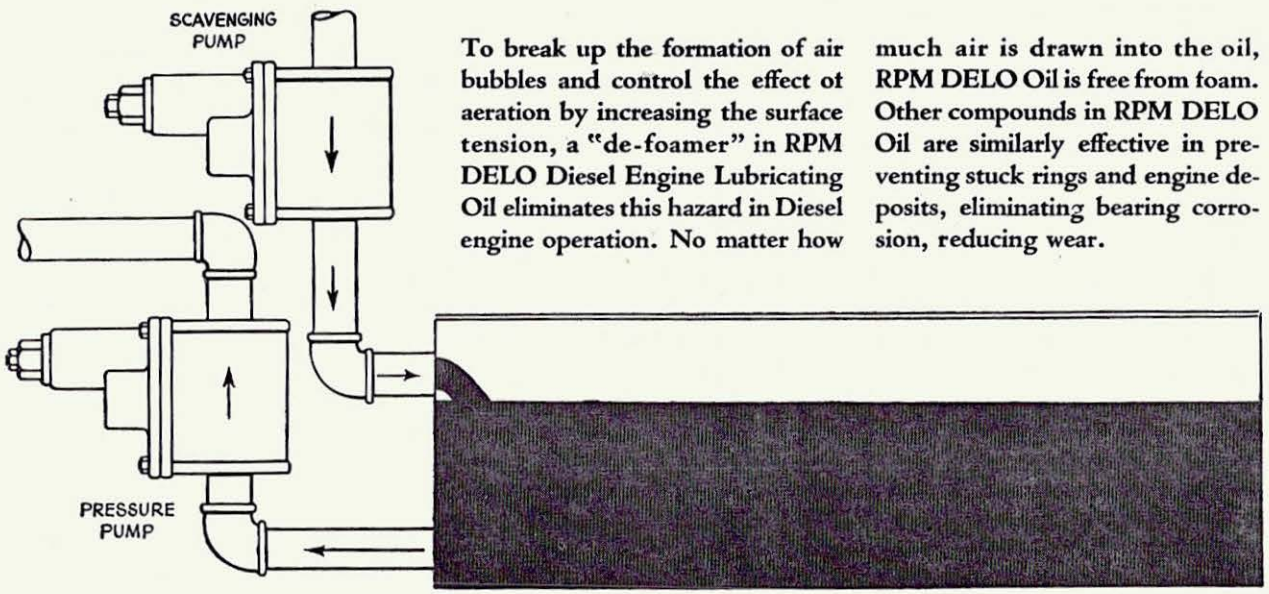
Diesel Engine DANGER points

AIR BUBBLES ENDANGER OIL CIRCULATION



In Diesel engines equipped with dry-sump lubricating systems, air and oil are sucked into the scavenging pump and whipped into foam. These air bubbles may enter the pressure pump and interrupt circulation of oil, retard full flow of lubricant to bearings and other vital points. Crankcase foaming in wet-sump engines can frequently be a problem, too, and should, of course, be controlled.

RPM DELO OIL PREVENTS CRANKCASE FOAMING



To break up the formation of air bubbles and control the effect of aeration by increasing the surface tension, a "de-foamer" in RPM DELO Diesel Engine Lubricating Oil eliminates this hazard in Diesel engine operation. No matter how much air is drawn into the oil, RPM DELO Oil is free from foam. Other compounds in RPM DELO Oil are similarly effective in preventing stuck rings and engine deposits, eliminating bearing corrosion, reducing wear.

To match the fine performance of RPM DELO OIL, use these equally efficient companion products from the same famous "RPM" line—RPM HEAVY DUTY MOTOR OIL—RPM COMPOUNDED MOTOR OIL—RPM GEAR OILS AND LUBRICANTS—RPM GREASES. For additional information or name of your distributor, write any of the companies below:

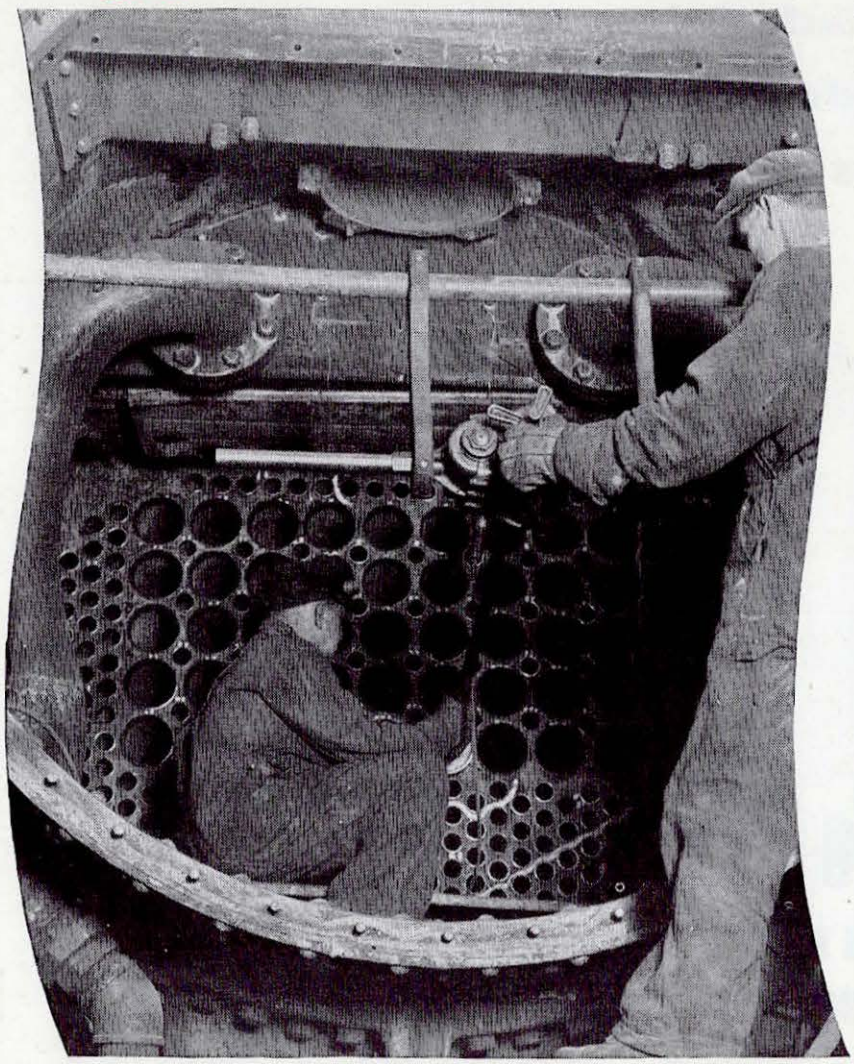
STANDARD OF CALIFORNIA · 225 Bush St., San Francisco 20, California
THE CALIFORNIA COMPANY · 17th and Stout Streets, Denver 1, Colorado
STANDARD OIL COMPANY OF TEXAS · El Paso, Texas
THE CALIFORNIA OIL COMPANY · 30 Rockefeller Plaza, New York 20

RPM DELO
DIESEL ENGINE LUBRICATING OIL

4 REASONS WHY

REPUBLIC ELECTRUNITE BOILER TUBES

GO IN FASTER-STAY IN LONGER



Republic ELECTRUNITE Boiler Tubes offer you four distinct advantages — advantages which speed up boiler retubing of vitally needed locomotives . . . which lengthen time between retubings.

Here they are:

1. CONSISTENT UNIFORMITY—in wall thickness, diameter and concentricity—due to Republic's *improved* process of electric resistance welding.

2. HIGH DUCTILITY—resulting from full normalizing of every tube throughout its entire length—increases ease of expanding, rolling and beading . . . means tight, non-leaking joints in a hurry.

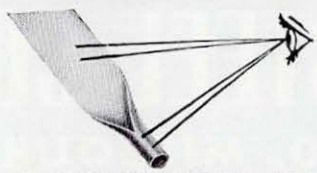
3. SMOOTH, CLEAN SURFACES—free from trouble-inviting scale and scale pits—because these *modern* tubes are cold-formed from flat-rolled steel, both sides of which are carefully inspected before processing.

4. COMPLETE SAFETY—proved by a rigid routine of tests, including hydrostatic test of every tube at pressures in excess of code requirements.

Don't underestimate the importance of using highest-quality tubes in your boilers. Play safe—and save money—by specifying Republic ELECTRUNITE the next time you order boiler tubes. For further information, write to:

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

INSPECTED INSIDE AND OUT



Republic ELECTRUNITE Boiler Tubes are made from highest quality flat-rolled steel, both sides of which are open to close visual inspection. Thus the surface which becomes the inside wall when formed into tubing is free from hidden defects.

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ELECTRUNITE
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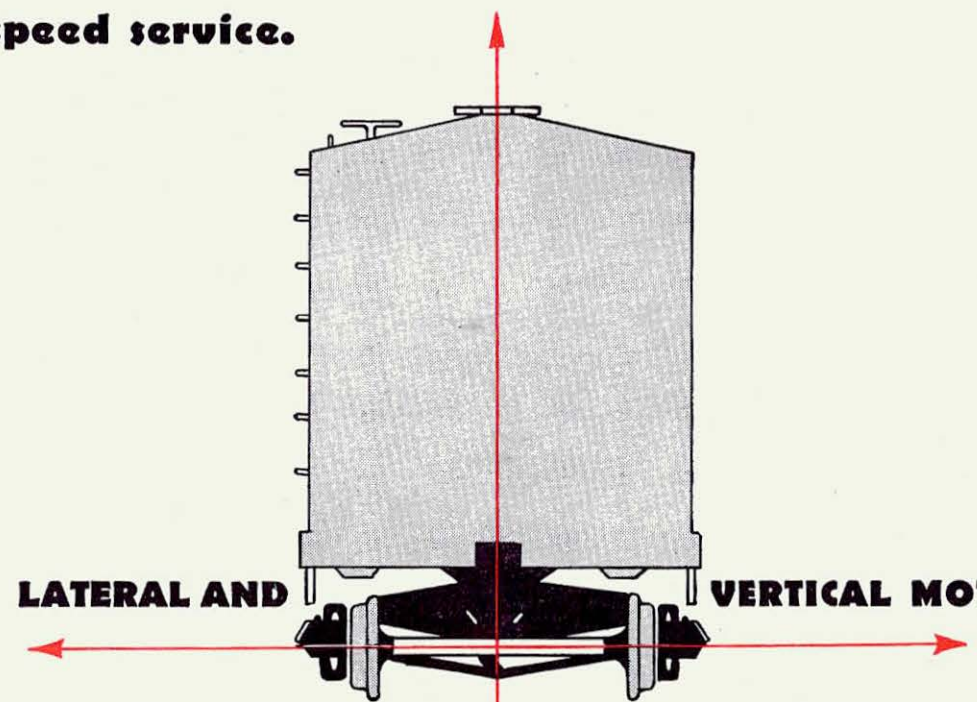

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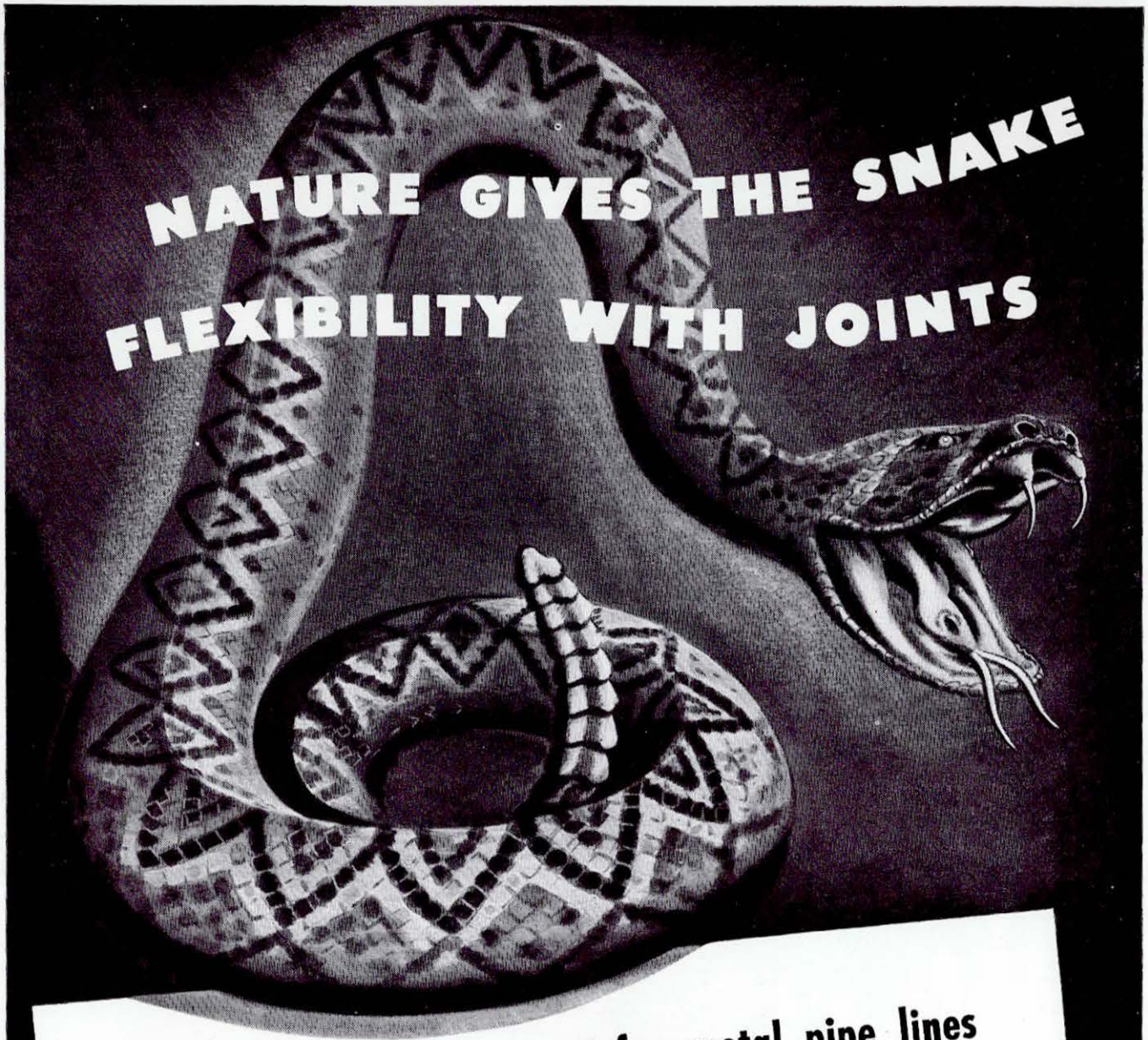

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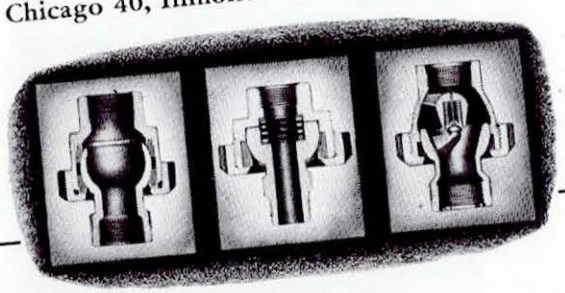

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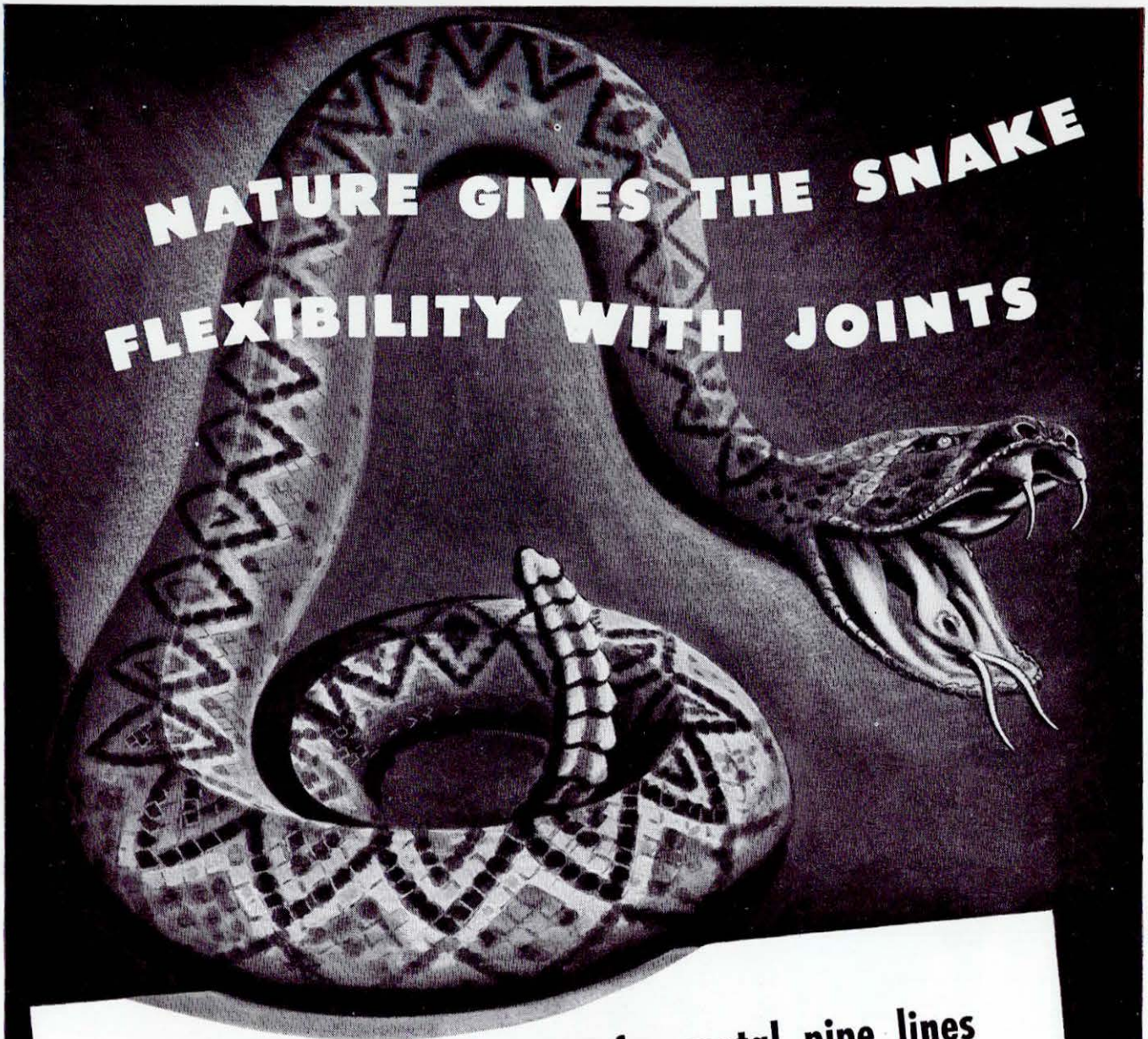

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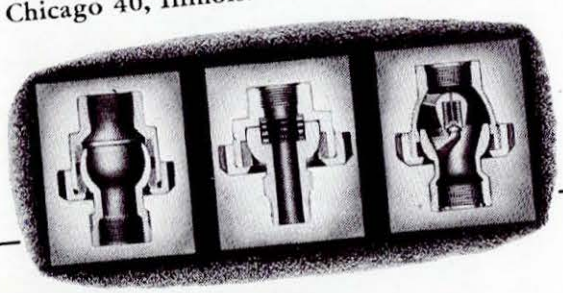

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Here's a new Baldwin locomotive of particular interest to railroad men who are thinking about tomorrow's competition—*and how to meet it.*

Built for the Seaboard Air Line Railway to speed perishable fruits and vegetables to northern markets, it packs more power than any other single unit diesel-electric on the rails.

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A number of these new Baldwin-Westinghouse Diesel-Electric locomotives have already been ordered by other roads. We will be glad to furnish you with complete specifications, on request. The Baldwin Locomotive Works, Locomotive and Southwark Division, Philadelphia 42, Pa., U. S. A. Offices: Philadelphia, New York, Chicago, St. Louis, Washington, Boston, San Francisco, Cleveland, Detroit, Pittsburgh, Houston, Birmingham, Norfolk.

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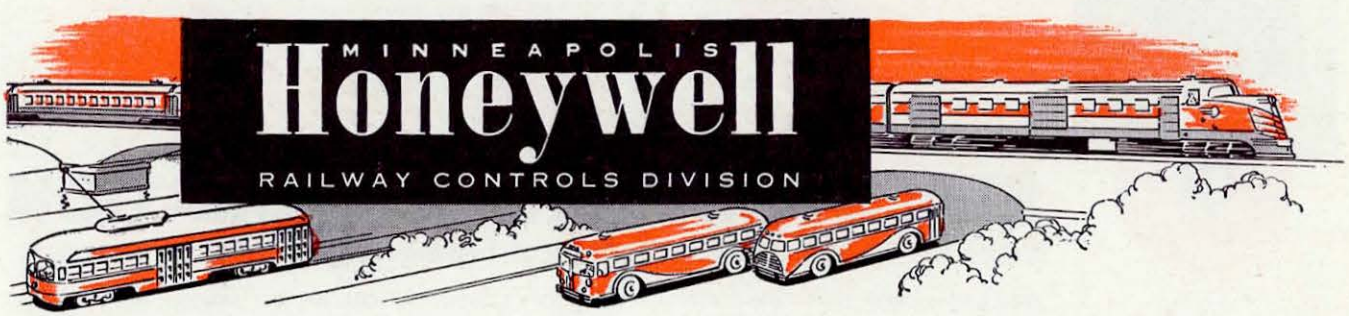
Complete information about the Honeywell full modulation diesel engine shutter control system will be furnished promptly. Write Minneapolis-Honeywell Regulator Company, Railway Controls Division, 435 East Erie Street, Chicago 11, Illinois.



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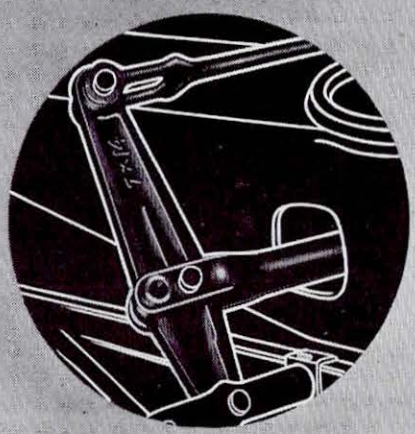
HOW Schaefer HOLLOW SECTION CONNECTIONS SAVE WEIGHT . . .

Schaefer TRUCK LEVER CONNECTIONS



NOWHERE in the various appliances made by Schaefer is the adaptability of "less weight—full strength-plus" more easily attained than in the compression member commonly called a truck lever connection. The old solid design of necessity had built into it a considerable amount of dormant material. The hollow-section was naturally more efficient and also more flexible as to design. In earlier years the "offset" type was in common use and here it was possible to redistribute the main body section so as to meet the added bending stresses introduced by the drop in the main body below the jaw structure. The feature of the hollow section is still further taken advantage of by special manufacturing methods whereby part of the material normally located in the body structure is moved into the jaw structure, thus vastly increasing the compressive strength of the member at a considerable saving in total weight.

Since Schaefer connections are all of one piece they are indestructible. Page 9 shows a history of 30 years' use for one installation. Every user knows that with the introduction of Schaefer Truck Lever Connections, some thirty years ago, the constant trouble factors then commonly experienced were eliminated.

The need for larger capacities to meet heavier brake applications (as in the case of connection through bolster) has been fully met. A complete line is available—sizes most commonly used are carried in stock.

Schaefer Truck Lever Connections were approved for interchange repairs in 1918 at which time a price was established in the interchange rules of the Association of American Railroads under the title of "Brake connection, bottom, forged hollow design, rule No. 101, item No. 106". Many improvements have, since then, been made in the original design. The interchange price arrangement, however, is still in force.

Truck lever connections to meet every application to freight cars and engine tenders are described and illustrated in the new Schaefer Catalog No. 445. Write today for your copy.

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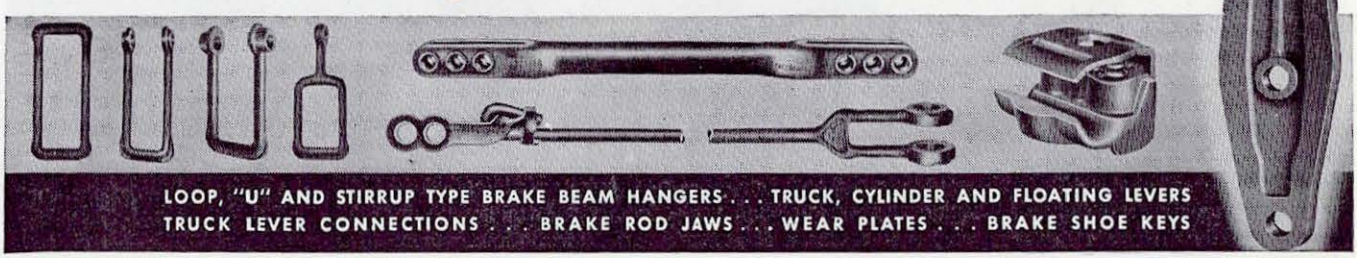

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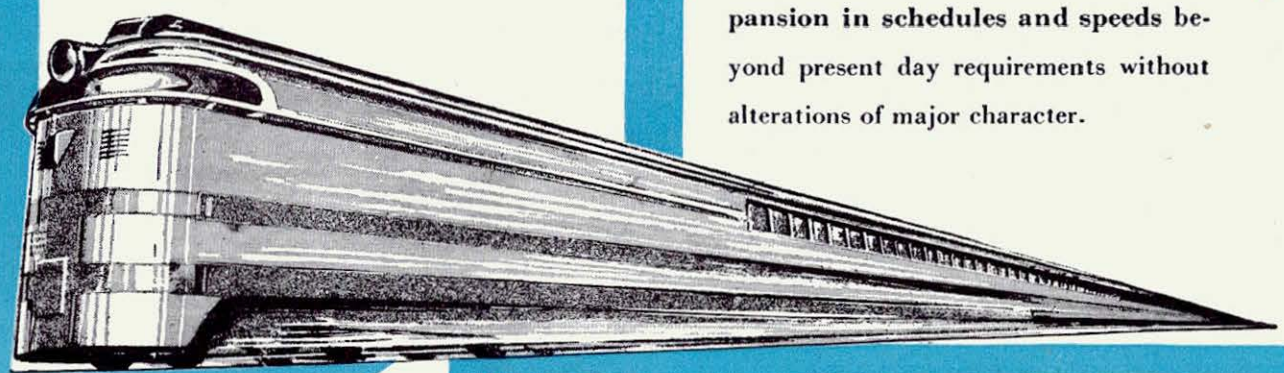
Some scientists believe atomic power can be used to run railroad locomotives. If so, what type of brake will be required to control this new form of energy with the same degree of precision, smoothness, and safety as present day brakes?

Speculative thinking, of course!

But the pattern in modern braking is clearly defined. Most of ordering railroads now specify "HSC" electro-pneumatic brakes for passenger cars. The complete schedule embraces the modern ultimate in safety and passenger comfort. It is the basis which permits **forseeable expansion in schedules and speeds** beyond present day requirements without alterations of major character.



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Railway Age

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 120 March 23, 1946 No. 12

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New system facility on the Northern Pacific at Livingston, Mont., gives recognition to the large investment in roadway machines and the need for protecting this investment through high standards of equipment maintenance and repair.

What Employees Think About Their Jobs and Railroad Service **617**

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The Railroad Record in World War II **631**

A review by Professor William J. Cunningham, of Harvard Business School, who urges U. S. roads to remain alert in order to assure retention of their private-ownership status in a world where most railways have been socialized.

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service.

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The Week at a Glance

EMPLOYEE OPINION: Further results of the first scientific nation-wide opinion research project ever to be conducted among railroad employees are set forth in this issue in another 12-page article, which completes the report started in the article that appeared in the March 2 issue. The survey was made under the sponsorship of *Railway Age* and two associated publications. Significant disclosures of the present article tell why railroad employees generally like their jobs and what fault was found with railroad employment. Also set forth are employee views on such matters as their chances for promotion; seniority rules; inter-union rivalry; "full-crew" and train-limit restrictions; and railroad service to shippers and passengers.

●

COAST-TO-COAST: Through Pullman car service from the Atlantic to the Pacific will be inaugurated March 31 by groups of cooperating eastern and western roads. At the outset there will be service from New York City and Washington through Chicago to Los Angeles and San Francisco. Participating eastern roads include the New York Central, Pennsylvania and Baltimore & Ohio, their western connections being the Santa Fe, North Western, Union Pacific and Southern Pacific.

●

GREAT NORTHERN: Traffic, revenues, finances and other phases of Great Northern's present situation and prospects are discussed in one of this issue's illustrated feature articles. Its finances greatly strengthened as a result of its debt-reduction program and refinancings which have cut the average interest rate to 3.4 per cent, the road is also found with better-than-average traffic and revenue trends.

●

PAPER RATES: The term "paper rates" usually applies to published charges too high to attract traffic; but "paper rates" can also get into the wage structure. Wage costs so high as to force freight rates and passenger fares to levels which drive business to railroad competitors mean fewer jobs on the railroads. This warning to employees was sounded as railroad executives continued the carrier presentation before the arbitration boards at Chicago. The latest sessions of this joint hearing are reported in the News Department, where there is also a report of the emergency-board proceeding on wage and rules demands of the Brotherhood of Railroad Trainmen and Brotherhood of Locomotive Engineers.

●

WAR RECORD: The performance of American railroads in World War II was compared with that of World War I by Professor Cunningham of Harvard Business School in the commencement address which he delivered recently at Clarkson College, Potsdam, N. Y., where he received the honorary degree of doctor of science. Dr. Cunningham's address is presented in one of this issue's feature articles. Looking to the future, he expressed his view that it would be a mistake of great magnitude to remove this country's roads from the realm of private enterprise. And he also had something to say about the railroad attitude toward employment of college graduates; and about the proper approach of a college man to his railroad job.

●

RAIL-BARGE RATES: The Interstate Commerce Commission has received from Examiner Howard Hosmer a proposed report in the long-pending case involving rail and barge joint rates. The proceeding was instituted by the commission in 1935, the principal issue becoming the question of whether the commission should exercise its authority to prescribe joint rail-barge rates differentially lower than all-rail rates. Mr. Hosmer's report, which is covered in a news story herein, recommends that differentials be prescribed, his proposals in general following those sponsored by the government-owned Inland Waterways Corporation.

●

AFTER EIGHT YEARS: Although it imposed no such restrictions when it authorized the Rock Island eight years ago to purchase the business of an independent trucker, the Interstate Commerce Commission now comes up with a report on reconsideration which limits the highway service involved to that which is auxiliary to, or supplemental of, train service. The decision, reported in the News Department, in effect restates the basic principles upon which certificates authorizing railroad acquisition of truck lines will be framed.

●

REVENUE PER EMPLOYEE: Average railroad revenues per employee and per dollar of wages were lower in 1944 than in 1943, despite the fact that the 1944 gross reached an all-time peak. In 1945 both averages were much lower than in either of the two preceding years. These and other interesting gleanings from its analysis of railroad data are pointed up by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics in the latest issue of its "Monthly Comment." The usual review of the "Comment" appears back in the News Department.

●

AIR-RAID THREAT: The Post Office Department's second assistant postmaster general, Gael Sullivan, has made a report on the "Future of Air Mail Transportation," which suggests that legislation should be adopted at once providing a domestic air postage rate of five cents per ounce to remain in effect until a lower rate is within the means of the department, or until it reaches the conclusion that conditions permit transporting all long-haul, first-class mail by air. It is conceded that such a plan might cut railroad mail pay by $22 million annually, but Mr. Sullivan doubts that the railroad loss would actually be that great. The report also suggests legislation to establish an air parcel post service—after decision has been reached on the policy question of whether such a service should be "merely self-sustaining" or should yield a profit. A story in the News Department reviews Mr. Sullivan's observations and findings.

NOT HELPFUL: In the columns of the New York Times there has recently been some discussion of a proposal that the Port of New York Authority build in New York City a bus terminal which the Authority would operate, the bus lines paying a rental charge high enough to meet operating and capital costs—but covering taxation only if earned, and only on the unimproved land, not on the value of the structure. A member of the staff of this paper joined in the discussion, suggesting that if taxes were to be remitted on improvements to property used as a bus terminal, a similar remission on railway terminal improvements would be in order. The executive director of the Port Authority countered with a long letter containing several assertions, so this issue's leading editorial takes up the discussion. It answers the director's principal assertions and finds such "red herring" methods of argument not at all helpful to the solution of that pressing and practical public problem of deciding whether adequate fixed facilities for the transportation business can be provided by private capital activated by the profit motive.

●

MODERN SHOP: Labor shortages and unusually heavy programs of roadway and structures maintenance during the past few years have prompted the Northern Pacific to expedite the mechanization of its track and bridge and building forces. This program was recently rounded out by the completion at Livingston, Mont., of one of the most up-to-date work equipment repair shops in the country. The shop, fitted to handle efficiently the heavy maintenance and repair of the major part of the roadway machines on the system, is described in an illustrated feature article herein.

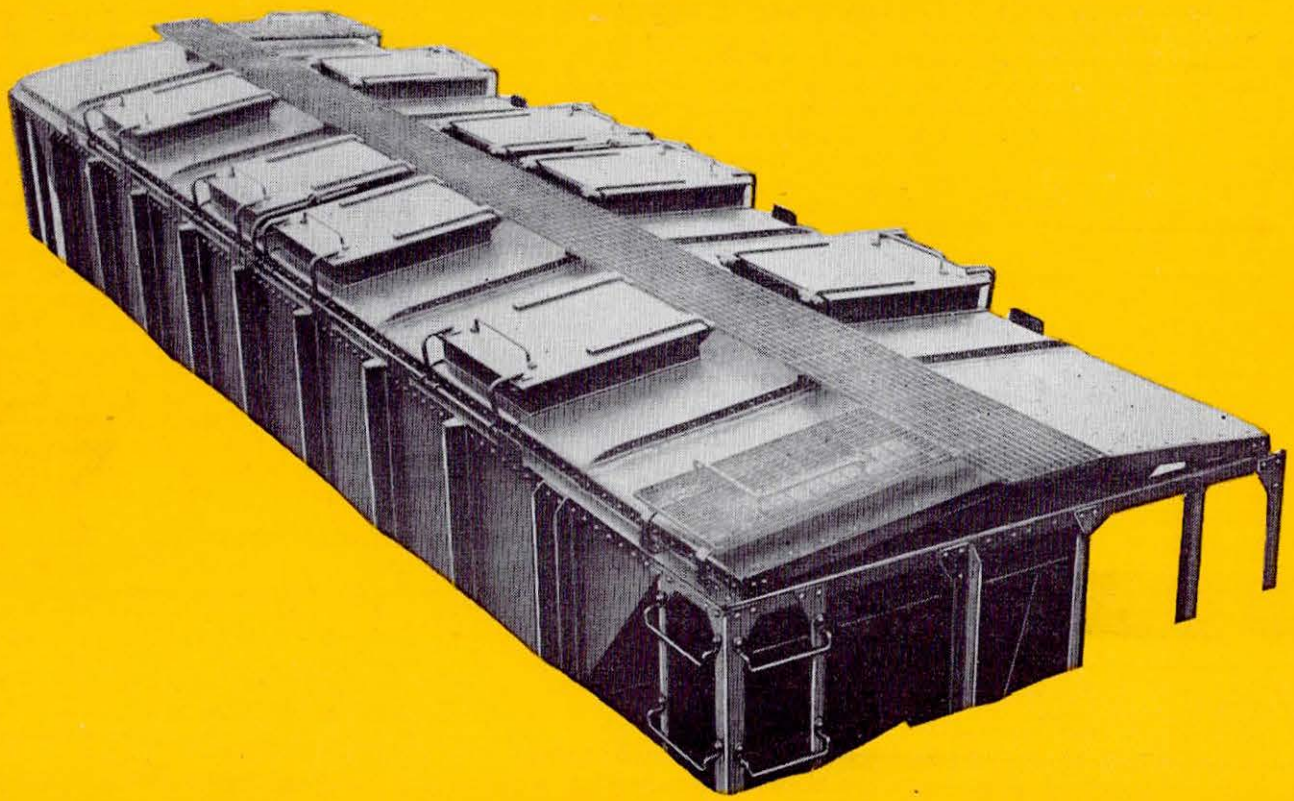
●

ACTS OF FAITH: In spending millions of dollars to provide the highest type of post-war service with modern facilities and well-trained employees, the railroads are acting on faith that the common sense and innate fairness of the American people will eventually exert a pressure sufficient to budge the sound national transportation policy declared in the Transportation Act of 1940 from its present blueprint-on-file state. That faith of the railroad executives was expressed this week by President Gustav Metzman of the New York Central in an address reported back in the News Department. Mr. Metzman spoke before the Pacific Coast Transportation Advisory Board, calling upon the assembled shipper representatives for assistance in marshalling public opinion behind a program whereby the national policy will be "thoroughly implemented and turned into constructive action."

●

READING LOCOS: The Reading is now constructing in its own shops 10 locomotives of the 4-8-4 type, thus building up to a total of 30 units its fleet of these Class T-1s which are used in fast freight service. The engines are described in an illustrated feature article herein. They weigh 441,300 lb., and develop a tractive force of 68,000 lb.—79,000 lb. with a booster.

"STANDARD"



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RAILWAY AGE

Public Discussion of Transportation Policy

In the columns of the New York Times there has recently been some discussion of a proposal that the Port of New York Authority build a bus terminal in New York. The Authority would operate the facility and the bus lines would pay a rental charge, high enough to meet operating and capital costs—but covering taxation only if earned, and only on the unimproved land, not on the value of the structure.

A member of the staff of this paper joined in this discussion, suggesting that if taxes were to be remitted on improvements to property used as a bus terminal, a similar remission on railway terminal improvements in the city would be in order. This proposal was not advanced in furtherance of some abstract ethical principle of "fairness" to the railroads (valid though such a contention might be)—but, rather, from the wholly practical standpoint of making it competitively possible for the railroads to continue providing the public with terminal facilities as up-to-date as are economically justifiable; and comparable in modernity to the plant of other transport agencies.

It was pointed out that hundreds of millions of dollars have been expended on highway facilities in the New York area in the years since World War I, that these facilities yield no taxes, and that users do not pay fees sufficient even to cover all capital and maintenance costs. The city has now embarked upon a parallel program of tax-exempt construction in behalf of air transport, for which, also, fees from users will meet only a fraction of capital and maintenance costs. Since such large outlays of public funds for other agencies of transportation began, extensive improvements to railroad property, except grade crossing elimination required by law, have virtually ceased in the city.

The public still needs the railroads, and it needs modern railroad terminals at least as urgently as it needs modern facilities for highway or air transportation. Quite aside from any question of injustice to the railroads, and wholly as a practical matter of public interest, some method of financing facilities for highways and airlines ought to be evolved which would not serve to discourage similar improvements by the railways, as present practices undeniably do.

A. J. Tobin, executive director of the Port of New York Authority, in a long letter to the New York Times, countered this presentation with several assertions, the principal ones of which may be summarized as follows, with answers thereto in italics:

1. He said that the proposed bus terminal would serve, primarily, commuter traffic which does not use the railroads; hence remission of taxes would not be much of a competitive factor against the railroads. *It is just as much in the public interest that railroad travel either by commuters or for long distances should have the improved facilities and/or fare concessions which tax remission on terminal property would make possible as it is that such favors should be extended to bus riders.*

2. Mr. Tobin asked whether "transportation progress can or should be halted whenever private capital cannot undertake it on a full taxation and profit basis." *Excepting the minimum of facilities required for fire and police protection and the national defense, the answer to Mr. Tobin's question is "yes." If we are to have political and economic freedom, then people should have just that amount of transportation or any other commodity or service which they are willing to sustain by their voluntary expenditures. Any standard work on economic theory will substantiate this.*

3. Mr. Tobin argued in support of tax aid to highway transportation that in the early development of Western railroads "about $650,000,000 of land was granted to them." *The report on "Public Aids to Transportation" by the Federal Coordinator of Transportation gives the grand total of federal and state land grants to the railroads at 183 million acres and the value of the land at 97 cents per acre—yielding a total not much more than one-fourth of Mr. Tobin's figures. He neglected to mention that the value of these lands was repaid to the federal government many times over in reduced rates. Besides, of what possible assistance could land grants to Western railroads 75 years ago be to New York railroads in 1946, in enabling them to match out of their resources the expenditures for fixed plant which governmental agencies in New York are making for other transportation agencies out of the public till?*

4. Mr. Tobin cited tax contributions to grade-crossing elimination projects as instances of governmental assistance to the railroads, presumably justifying parallel outlays for the benefit of highway transportation. *All the world knows, of course, that governmental aid in grade-crossing elimination has been motivated wholly by the desire to improve highway transportation. The contributions of tax money for this purpose, indeed, have been made in behalf of highway transportation as its share of these expenditures. The railroads are usually expected to pay in full for whatever benefit they may expect to derive from these improvements.*

5. Mr. Tobin mentioned loans by the Reconstruction Finance Corporation to the railroads in the '30s as another instance of government aid to the railroads, implying that such assistance is kindred to that which he now wishes to extend to the bus lines. *The profitable lending business which the R. F. C. has done with the railroads scarcely qualifies as charity. In any event, it does nothing to provide railroad patrons with terminal conveniences of greater extent than they are willing to pay for, which is the advantage which Mr. Tobin is seeking to provide bus riders, at the taxpayers' expense.*

Space limitations prevent the discussion of other points made by Mr. Tobin, but practically all of them are of the "red herring" variety sufficiently indicated by those already cited. His purpose in public discussion of such a grave matter of policy as this appears to be, primarily, one of finding casuistic arguments which may serve *ex post facto* to justify to the uncritical the present discrimination being practiced against fixed transportation property in private ownership. As a public officer charged with some responsibility for the well-being of all the transportation facilities of the post area, he might better look to such discussion to help him find a formula for dealing with all transportation agencies in a manner which will not uneconomically depress some of them in order uneconomically to expand others.

The problem of public policy toward transportation is the pressing and practical one of deciding whether adequate fixed facilities for this business can continue to be provided by private capital activated by the profit motive. An attempt to conjure up an image of "the railroads" as an ogre-like personality—which was overfed 75 years ago and even recently and, hence, deserves to starve today—is not especially helpful in advancing the public interest in the continuance of efficient and reliable railroad service.

Good Salesmanship Includes Good Service

One "smoggy" Chicago morning the representative of a company that manufactures protective coatings walked into one of our editorial offices seeking information on how to sell to the railroad market. Of good appearance, polite, and imbued with enthusiasm for his products, he spent the greater part of an entire morning questioning and listening to the opinions of one of the staff editors, an experienced railroad man and, what was more important to the representative, one who in his railway capacity had studied maintenance needs, selected, bought and supervised the application of thousands of gallons of paint and protective coatings.

A few days ago that same representative called again by appointment after a lapse of several years between the first and the latest visit to, as he expressed it, review his efforts and those of his company in promoting the use of products that during that period have become well established on several prominent railroads. Harking back to that first interview, our friend told of how he had been impressed throughout the editor's conversation with the need for Service in conjunction with successful railway sales.

Subsequently, he told the story, illustrated with many specific incidents, of how successful railway sales had been built up through a combined service and sales policy. Instead of waiting for railway men to come to them with maintenance problems—he and other sales or service representatives went out searching for those problems.

After careful on-the-ground studies, written reports and recommendations, these representatives followed through, often supervising initial surface preparations and applications. Costly? Possibly. But in practically every instance they licked the problems—if not through the initial application, then through experience gained by thoroughgoing measures that convinced railway officers of the manufacturer's interest and the quality and value of his products.

There are many good railway products on the market, but unlike the old mousetrap fable, few railway men have the time or the inclination to beat a path to the factory door.

A. R. E. A. Shows the Way

The recent annual meeting of the American Railway Engineering Association, reported in detail in last week's A. R. E. A. convention issue of this paper, was a remarkably successful affair. With a registration of 723 members and 614 guests—a total of 1,337, the largest on record with the single exception of 1929—this meeting demonstrated not only the high value that railway men place on such meetings for discussing their common problems, but also proved beyond question that both railway men and those in the railway supply industry have been "raring" to resume normal convention activities after the war years of restricted or abandoned meetings.

The success of the A. R. E. A. convention supports the opinion of *Railway Age,* which as early as in its issue of September 1, 1945, began to call for the early resumption of the annual meetings of railway associations, pointing out that "more than ever before, it is imperative that railway associations, both voluntary and official, aggressively plan and prepare for holding conventions as early as practicable." It is likewise a vindication of those within the A. R. E. A., who, in the face of some opposition, went ahead aggressively with plans for the convention which has now gained such general approbation.

First among the larger railway associations to resume normal activities after the war, the A. R. E. A. and its officers are to be congratulated on their foresight and determination. They have battered down the fears of inconveniences and difficulties assumed by some to be insurmountable, and have shown the way for other railway associations contemplating meetings during the remainder of the year.

It has been demonstrated that, with wise and aggressive planning, the success of conventions can now be assured. It is also evident that the rank and file of association members are straining at the leash to get going again, and need only foresighted leadership to translate their interest into tangible progress.

Avoiding Passenger Car Delays

A report recently prepared by one of the important standing committees of the Car Department Officers' Association contains many practical suggestions regarding the preparation of passenger cars at terminals in such a way as to avoid delays and failures en route. The extensive deferment of shopping programs during depression years resulted in railroads generally entering the period of World War II with passenger car equipment not up to desired standards and yet subject to unprecedented demands for moving both military and civilian personnel.

The problem of holding cars out of service long enough to make essential repairs was acute. Skilled mechanics, helpers, apprentices and laborers left their respective positions in car shops and train yards. A shortage of essential materials, especially acute in some instances, further hampered passenger-car maintenance and servicing at yards. In view of these conditions, the transportation records established pay high tribute to the ingenuity, resourcefulness and hard work of passenger-car supervisors and maintenance forces who remained faithfully on the job during a most difficult period.

The generally effective handling of passenger-car servicing operations during the war was made possible largely by adherence to past standard practices which have proved their merit and the adoption of new methods and the installation of a limited amount of new machinery and equipment where it would do the most good. As a result, delays and failures were minimized and passenger car maintenance forces learned how to work together and with other departments to achieve an objective which will be of the utmost importance in the highly competitive era now confronting the railroads.

One important requirement in reducing passenger-car delays, emphasized in the report mentioned, is the thorough investigation of all instances of hot journals, brake-rigging defects, train separations, hose parting, brake sticking, flat wheels and failures of steam heat, air-conditioning and electrical equipment. The resultant determination of causes, whether man failure, faulty design, or lack of maintenance, has permitted setting up many new standard practices for mechanical-department forces to follow in daily and periodical maintenance of passenger equipment.

Another essential is that supervisors select the right kind of men for car inspectors, a difficult job during the war period and never too easy at any time, instructing these men in their work, keeping them alert and always fully aware of their responsibility for train delays and failures in case they become lax or careless. In this connection, car inspectors deserve and require the full support of their superiors, as it is definitely discouraging and demoralizing for any car inspector to chalk mark some defect in the train yard or repair track and then see the car returned to service with that defect uncorrected. In cases where no question of safety is involved and it seems desirable, for one reason or another, to defer repairs, the car supervisor obviously should explain to the inspector why this is necessary.

The number of detail parts of passenger-car trucks, couplers, draft gears, brakes, steam heat, air-conditioning and electrical equipment which must be inspected and serviced daily in order to assure uninterrupted high-quality service to passengers reaches almost staggering proportions. The coach-yard and car-repair forces which look after these important details deserve the commendation of railway managements for effective work under difficult war conditions. They should receive not only moral encouragement, but every practicable mechanical assistance in the way of improved coach and repair track facilities, tools and special equipment so that passenger cars can be repaired and serviced with maximum speed and economy, which will certainly be required to meet competitive conditions of the future.

The Lion and the Lamb

The matter of car supply shows no signs of betterment. The threatened catastrophe of a poor wheat crop in a year when a good portion of the world is hungry appears now to have been avoided. Storms and heavy rains have saved the crop and prevented a recurrence of the "dust-bowl" conditions of a few years ago. Thus, the railways will be called upon again this summer to divert many first-class box cars to this movement.

On any basis of possibility, no prophet could see anything in the crystal ball other than a worsening of present conditions unless the lion and the lamb again lie down together. It was proved beyond question during the war that, in co-operation, the shippers and the railways could and did accomplish transportation feats that seemed impossible. They are going to have to do it again if we are to have effective transportation.

A recent letter to railway and shipper members of the Ohio Valley Advisory Board, signed by the general chairman and the chairmen of the efficiency and railroad contact committees, expresses the problem and its remedy succinctly as follows:

"We are facing a condition in transportation that is as serious as any we have ever had to deal with. The most efficient use which we previously made of our transportation facilities appears to have become a thing of the past. The cause for this lies not alone with the shipper but with the railroads as well. Each party has reasons to advance for his own action but the result is that the turn-around time has increased and box, coal and refrigerator cars are as scarce as they were during the war.

"The only possible avenue of present relief seems to be through the Advisory Boards and so the problem has again been brought to the front most forcefully. The effective appeal of patriotism and the war effort are with us no more. We must make a different but as effective approach in some other direction. We must act promptly.

"We can gain nothing from recriminations, or excuses as to why delays have occurred, on the part of either the shipper or the carrier. We must be concerned only in ways and means to eliminate both. We should dispassionately explore both and offer and require remedies for each. We must again call upon you as the only possible avenue of hope again to intensify your efforts to avoid every undue delay to cars either on the part of the shippers or the carriers."

Modern Shop Puts Skill and Efficiency in Work Equipment Repairs

New system facility on the Northern Pacific at Livingston, Mont., gives recognition to the large investment in roadway machines and the need for protecting this investment through high standards of equipment maintenance and repair

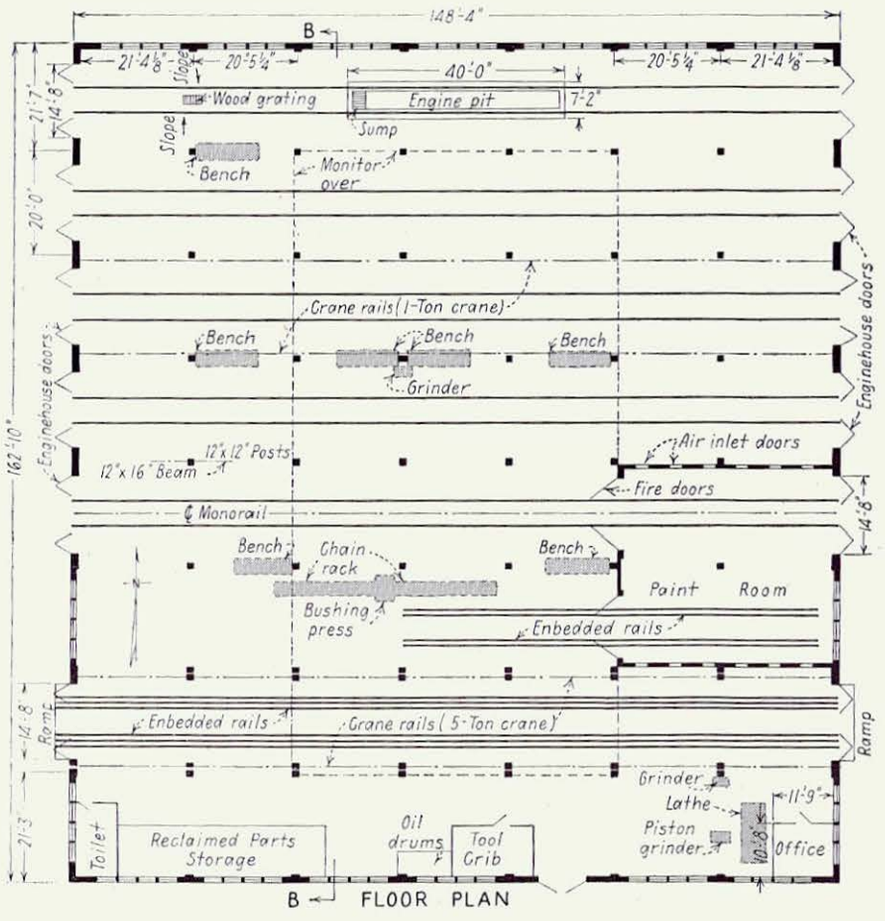
STIMULATED by labor shortages and unusually heavy programs of roadway and structures maintenance during the last five or six years, the Northern Pacific has made rapid strides in mechanizing its track and bridge and building forces, and has recently completed one of the most up-to-date work equipment repair shops in the country at Livingston, Mont., equipped to handle efficiently the heavy maintenance and repair of the major part of the roadway machines on the system.

Prior to 1939, this road, with 6,577 miles of line, and extending from St. Paul and Duluth, Minn., to Tacoma and Seattle, Wash., and Portland, Ore., handled its work equipment repairs at Brainerd, Minn., Livingston, Mont., and South Tacoma, Wash., in the mechanical department shops at these points, largely on a grand-division basis. Now, while some work equipment work is still done at these points, the major part is carried out in the new system shop at Livingston.

Up to 1939, the principal work equipment on the Northern Pacific included motor cars and some of the larger units, such as cranes, ditchers and pile drivers, and a few crawler-mounted shovels, bulldozers, rail cranes and tie-tamping outfits. Since that year the road has mechanized practically all of its major track operations, including rail laying, ballasting, surfacing and weed burning, and has also purchased a considerable amount of off-track grading equipment, with the result that today it has more than 1,675 important units of work equipment, including approximately 1,200 track motor cars.

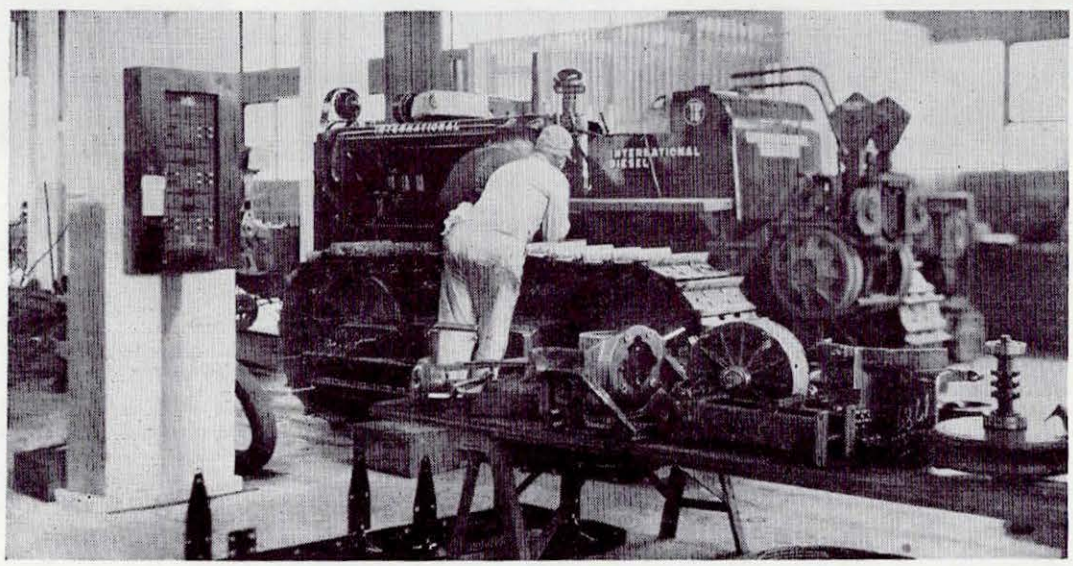
Under the former arrangement, all major work equipment repairs on the Northern Pacific were carried out by mechanical department forces at the three shop points already mentioned, utilizing such building space as might be available. All major work equipment repairs are still handled by the mechanical department forces, with the co-operation of the stores department, but in 1942, with the steady enlargement of work equipment ownership by the road, the present set-up, involving a system repair shop at Livingston, was put into effect. At that time, however, and until the completion of the new system shop, repair operations were scattered about in available shop areas at Livingston, with the larger part of them being concentrated in the car repair shop and the locomotive erecting shop—both old buildings, and both of which had become increasingly crowded by the added work on locomotives and rolling stock required by war traffic. In fact, to meet the need for larger locomotive repair facilities, the locomotive shop at Livingston was more than doubled in size during 1944, in conjunction with other extensive shop improvements at that point.* The new maintenance of way work equipment repair shop was built at that time, relieving other buildings of this class of work, and, for the most part, concentrating it under one roof in the hands of a separate, specially skilled organization. The exception to the general rule in this regard is the repair of the larger units of equipment, such as steam and gasoline-engine-powered ditchers, locomotive cranes, pile drivers, spreaders, etc., which is still done in the

* These improvements were described in the *Railway Age* of December 15, 1945.

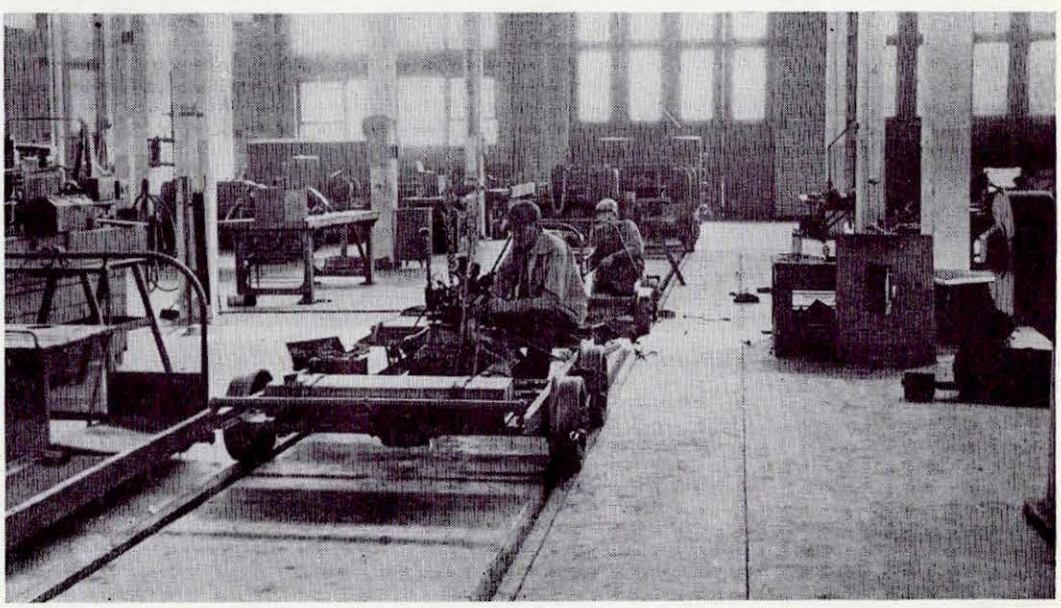


General floor plan of the shop, showing arrangement of tracks and more important shop facilities

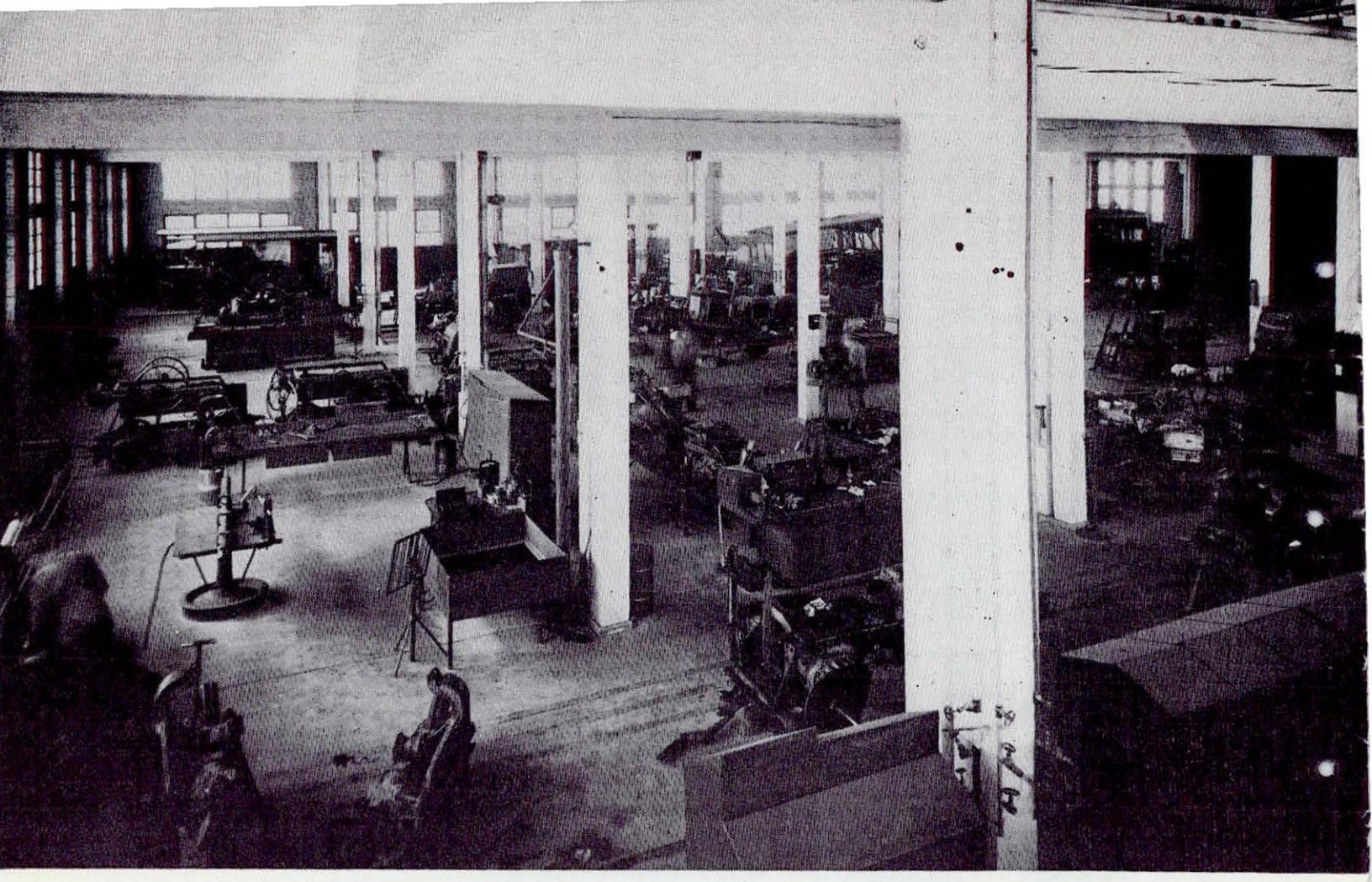
Work equipment repair parts and supplies occupy separate areas in the stores department stores buildings at the Livingston shops



Working on a crawler tractor in a section of the tractor bay



Work in the motor car bay, as in two of the other bays, is aided by overhead hoisting equipment



View within a section of the shop, showing general features of layout and construction

old locomotive shop, now relieved of much of its locomotive work by the new locomotive shop extension.

Rotate Equipment

Geographical conditions over the system have an important bearing on the operation of the new system work equipment repair shop at Livingston. On the eastern half of the railroad, where the use of roadway equipment is largely on a seasonal basis because of generally severe winter conditions, most of the equipment automatically goes to the shop with the close of the working season and is given early winter attention by the shop forces. On those portions of the road where all-year roadway operations are permitted by the more open winters generally prevailing, the equipment is not sent to the shop until late in the winter when most of the east-end equipment has been repaired or otherwise put in condition. Then to a large extent the east-end equipment is sent to the western half of the road as replacements, and the former west-end equipment, when repaired by early spring, is sent to gang organizations on the east end of the road.

Thus, much of the work equipment on the Northern Pacific passes from eastern gangs to western gangs, and vice versa, in alternate years, keeping those gangs on the west half of the road equipped through all seasons, while the requirements of those gangs on the east half of the road are met adequately throughout their working season. As repaired, and until sent out to the road forces, the equipment is stored under cover.

Repair Shop Fully Modern

Of modern, fire-proof construction throughout, the new system work equipment repair shop at Livingston incorporates a number of features designed to facilitate repair operations under the most favorable conditions, and allows in size for further expansion in the amount of work equipment on the road and in consequent shop operations. The building is located in a generally north and south direction, directly opposite the new locomotive erecting shop extension, where it is served by the transfer table serving the locomotive shop. It is one story high rectangular in plan, 163 ft. long parallel with the transfer table, and 150 ft. wide.

Influenced in its design by the difficulties in securing structural steel at the time it was built, the shop has common red brick walls, and a timber roof structure throughout, supported on parallel rows of 12-in. by 12-in. timber columns, which divide it into eight transverse bays, east and west, all of which are 20 ft. wide, except the end bays, each of which is approximately 21 ft. wide. Crosswise of the building the column spacing is 20 ft. 5¼ in., except immediately adjacent to the east and west walls, where it is 23 ft. Extending east and west through five of the transverse bays are five repair tracks.

Generally flat, and at an elevation about 22 ft. above the floor level at the eave lines, the roof of the shop has a low central monitor which covers about one-third of the building area. The monitor is of frame construction, with closed-in faces on its north and south ends, but with clear-glazed fixed and ventilating wood sash continuously along the east and west sides. Overall, the roof deck is covered with built-up composition roofing.

As mentioned previously, all exterior walls are of common red brick, are supported on concrete foundations, and have reinforced brick lintels. The north and south walls are each fitted with large areas of wood sash, glazed with clear glass, in two almost continuous panels 5 ft. 2 in. high, one above the other, while the east and west walls, providing entrances for the five repair tracks and a driveway serving the shop, are each

broken by a series of six four-section, vertically-hinged, folding doors, each 18 ft. high and affording a clear horizontal opening of 14 ft. These doors which are of a type used generally on the road for shops and enginehouses, are of wood construction, three panels high, the two upper panels in each case being equipped with clear glazed sash to enhance daylighting of the building interior.

Work Sectionalized

The five tracks serving the shop extend from a new ladder-track layout west of the building, which provides for the holding of a large amount of track-mounted equipment awaiting repairs. Each of the repair tracks occupies one of the transverse bays in the shop, and extends continuously through the building to the locomotive erecting shop transfer table directly to the east. With five of the eight transverse bays in the shop occupied by repair tracks, the remaining three have unobstructed floor areas and are assigned classes of work which do not involve track-mounted equipment.

The floor throughout is of concrete, 6 in. thick, flush with the tops of the track rails, and all tracks are supported on continuous 8-in. concrete foundation slabs. All floor areas were given a specially hardened, dust-proof wearing surface, and, in addition, within one of the bays assigned to crawler-tractor repairs, six lines of secondhand track rails were embedded in the concrete with three lines longitudinally beneath each line of tractor treads, and their heads flush with the floor surface, to absorb any tractor shoe wear.

The remainder of the shop has assigned areas for practically all other classes of work, which are specially equipped for the types of work to be carried out. Hoisting equipment within the shop includes two 5-ton overhead traveling cranes serving the tractor repair bay, a 1-ton and a 2-ton overhead traveling crane serving the bay where much of the motor car work is concentrated, and an overhead monorail serving a third bay where a variety of lighter work is carried out.

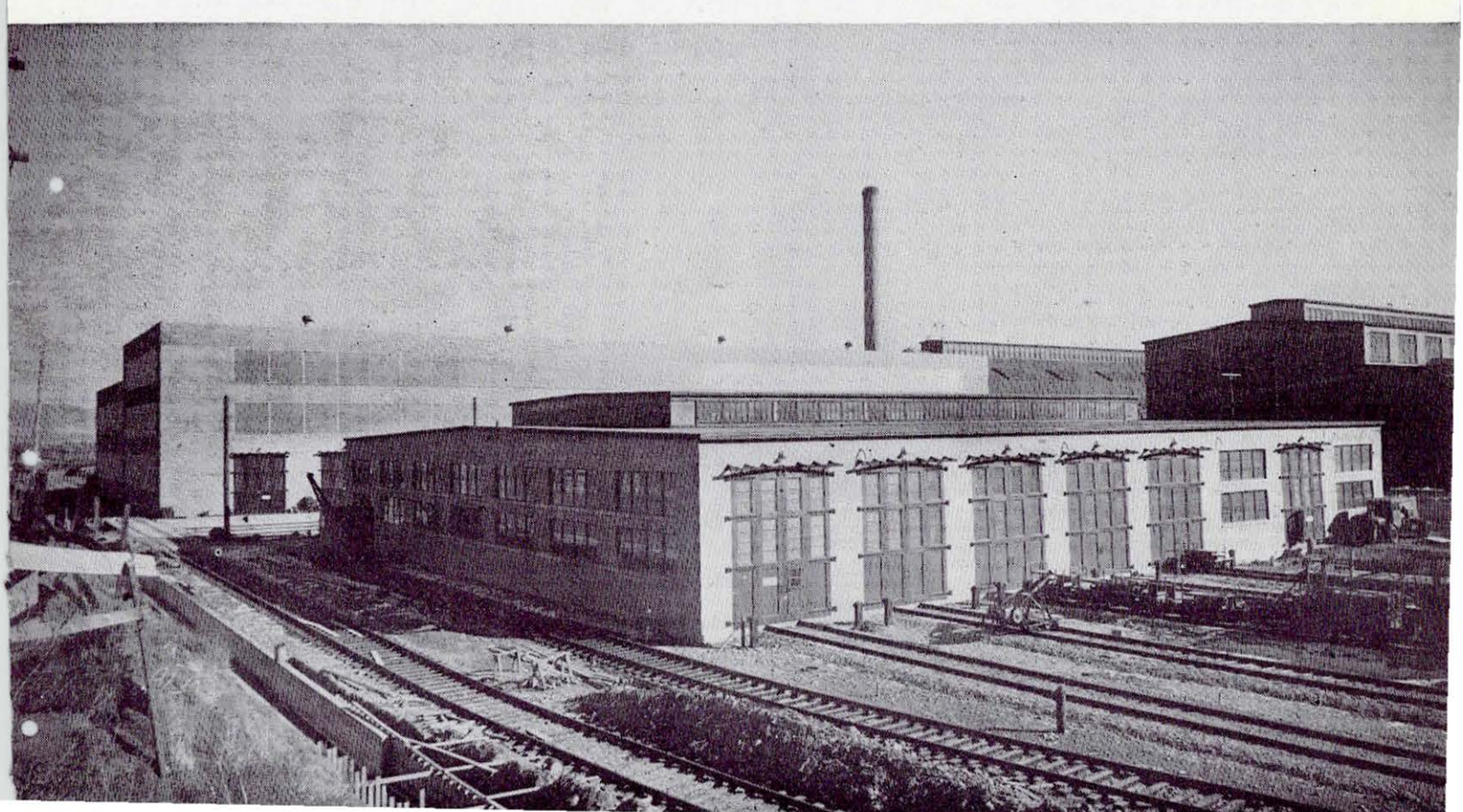
Many Other Features

Other features of the shop include a 40-ft. concrete inspection and repair pit at about the mid point of the track in the most northerly bay; a washing rack, with a grating-covered sump, in the same bay, immediately west of the repair pit; the interior finish of the shop, which is painted white throughout to improve appearance and to enhance both day and night illumination; a shop foreman's office; adequate toilet and washroom facilities; a specially ventilated and lighted paint spraying room; fluorescent lighting throughout the main shop areas; forced-circulation heating by means of a series of 12 roof-supported unit heaters; and an exhaust-gas collecting and discharge system, which makes it possible to run work equipment engines anywhere within the building while being repaired or tested, with a minimum of escaping fumes into the atmosphere.

The paint-spraying room, which occupies an area about 40 ft. long by 40 ft. wide along the east side of the shop, is fully enclosed by brick walls, except for door and ventilator openings. One track extends through the room to permit the movement of track-mounted equipment into and out of it and the openings for this track are fitted with large equipment doors in both the inside and outside walls. A smaller door alongside on the inner face of the room provides for the entrance of all other equipment to be painted.

Artificial lighting within the painting room is by means of 20 ceiling-hung explosion-proof electric lights, while ventilation is by means of a roof exhaust fan with a capacity of 30,000 cu. ft. of air per minute. To provide for this volume of exhaust, each of the side walls of the painting room is equipped near the floor level with a series of six ventilating openings. Each of these openings, approximately three feet square, is fitted with a vertical-sliding, counterweighted door, which can be raised and lowered by hand to produce the ventilation desired. In practice, the main door entrances to the room are closed during painting operations, and only those wall ventilating openings nearest the painting

General view of the new work equipment repair shop at Livingston—Recent locomotive shop extension in the background—Old car department shop at right



operations are uncovered at any one time. The effect of this is to cause a draft of fresh air to pass from the uncovered openings directly over the work, and then upward to the roof exhaust, carrying with it all paint fumes and any stray spray from the paint guns.

Lighting and Ventilation

Fluorescent lighting is used for general illumination throughout the repair shop proper. Altogether, there are a total of 205 fluorescent lighting fixtures within the shop, generally arranged in two parallel lines down through each transverse bay, and supported either directly from the underside of the roof, or suspended from steel messenger cables beneath the monitor area. All of the fixtures have three 40-watt fluorescent tubes, which, in combination with their arrangement, provide a lighting intensity of approximately 25 foot-candles at the floor level.

The exhaust gas ventilating system generally throughout the shop consists of an overhead collecting system of ducts, equipped with 4-in. sheet metal pipe drops at alternate columns in each transverse row of columns, which extend down to a point about 12 in. from the floor level. Each of the vertical pipes is fitted at its lower end with a flared metal collecting hood, and each is also equipped with a push and pull shut-off slide.

Providing the forced exhaust, the system has a large-capacity exhaust fan at the roof level, which can draw off floor vapors either locally or generally throughout the shop, governed only by the positions of the valve slides in the individual exhaust drops. Normally, it is the practice to open only those exhaust drops directly about any area in which engines may be running, and when any prolonged engine operation is required, a flexible tube is extended directly from the engine exhaust pipe to the flared bottom of one of the ventilating drops.

Large Volume of Work Handled

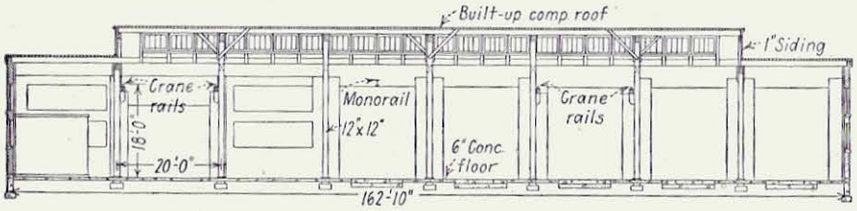
Another feature of the new shop consists of the special tools and equipment provided, and the adequacy of repair parts kept on hand to avoid delays in making repairs or replacements. Some of the more important tools provided include two power lathes, a piston grinder, a drill press, a cylinder borer, ignition testing apparatus, valve grinders, paint spray equipment, and work benches scattered about at strategic points, each equipped with appropriate bench tools. Certain other mechanical equipment is readily available to the shop forces, as required, located in the nearby car and locomotive shops, including a metal spraying machine for rebuilding worn parts and grinders for refinishing the rebuilt parts, which are located in the old locomotive shop.

Still another feature of the new equipment repair shop, in the interest of adequacy and efficiency, is the fact that it is piped throughout with compressed air, oxygen and acetylene, with outlets at frequent intervals for the air and for carrying out welding and cutting work. The air is furnished by compressors located in the power house serving the locomotive shop and other mechanical department facilities at this point, which was completely rebuilt in the recent improvements, while the acetylene and oxygen are piped from a new central oxy-acetylene building serving the shops, wherein acetylene is generated and oxygen is manifolded from tanks for distribution throughout the entire shop area.

Many small and inexpensive equipment parts are kept on hand in suitable bins and racks directly at the shop, but the main storage of work equipment parts and supplies is housed in one of the two large general stores buildings at Livingston, maintained primarily in connection with the locomotive and car department shops at that point.

As mentioned previously, all operations at the work equipment shop are carried out by mechanical department employees, but in each case the men are assigned steadily to maintenance of way work equipment repairs. The size of the force employed in the shop varies, but normally includes a foreman, 17 machinists and 5 helpers. Some indication of the volume of work handled by this force is seen in the number of units of equipment that have been overhauled monthly to date, which has ranged from approximately 50 to more than 70, depending upon the season of the year and the size of the units involved.

The designing and construction of the work equipment shop were done under contract by the Seattle office of the Austin Company, engineers and builders, of Cleveland, Ohio, under the direction of the engineering department of the Northern Pacific, in collaboration with its mechanical department. The handling of maintenance equipment on the road is under the direction of the engineering department, and immediate supervision over all such equipment is in the hands of S. H. Knight, supervisor of work equipment at St. Paul. All shop operations at Livingston are under the general direction of the mechanical department, and under the direct supervision of W. D. Gochenour, shop superintendent at Livingston.



Longitudinal section B-B through the shop, showing features of construction

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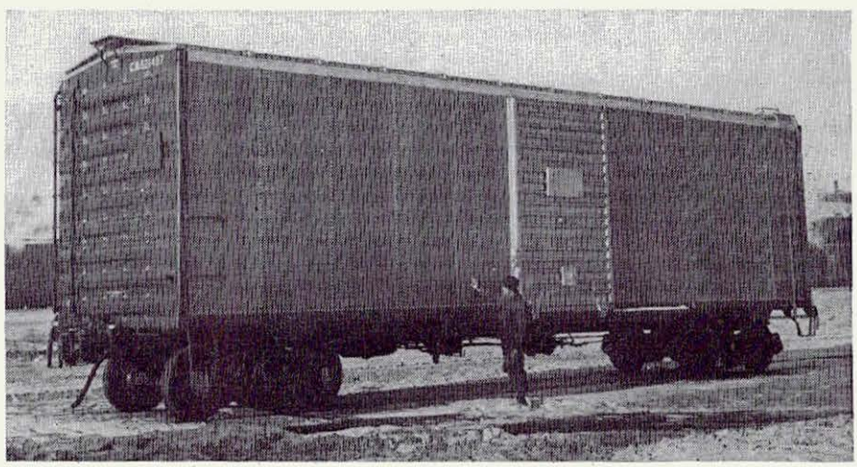


One of three new experimental freight cars built by the National Steel Car Company, Hamilton, Ontario, Canada for the Canadian Pacific. Exterior sheathing, roof, running boards, hand brake housing and doors are strong, light-weight aluminum

Railway Age

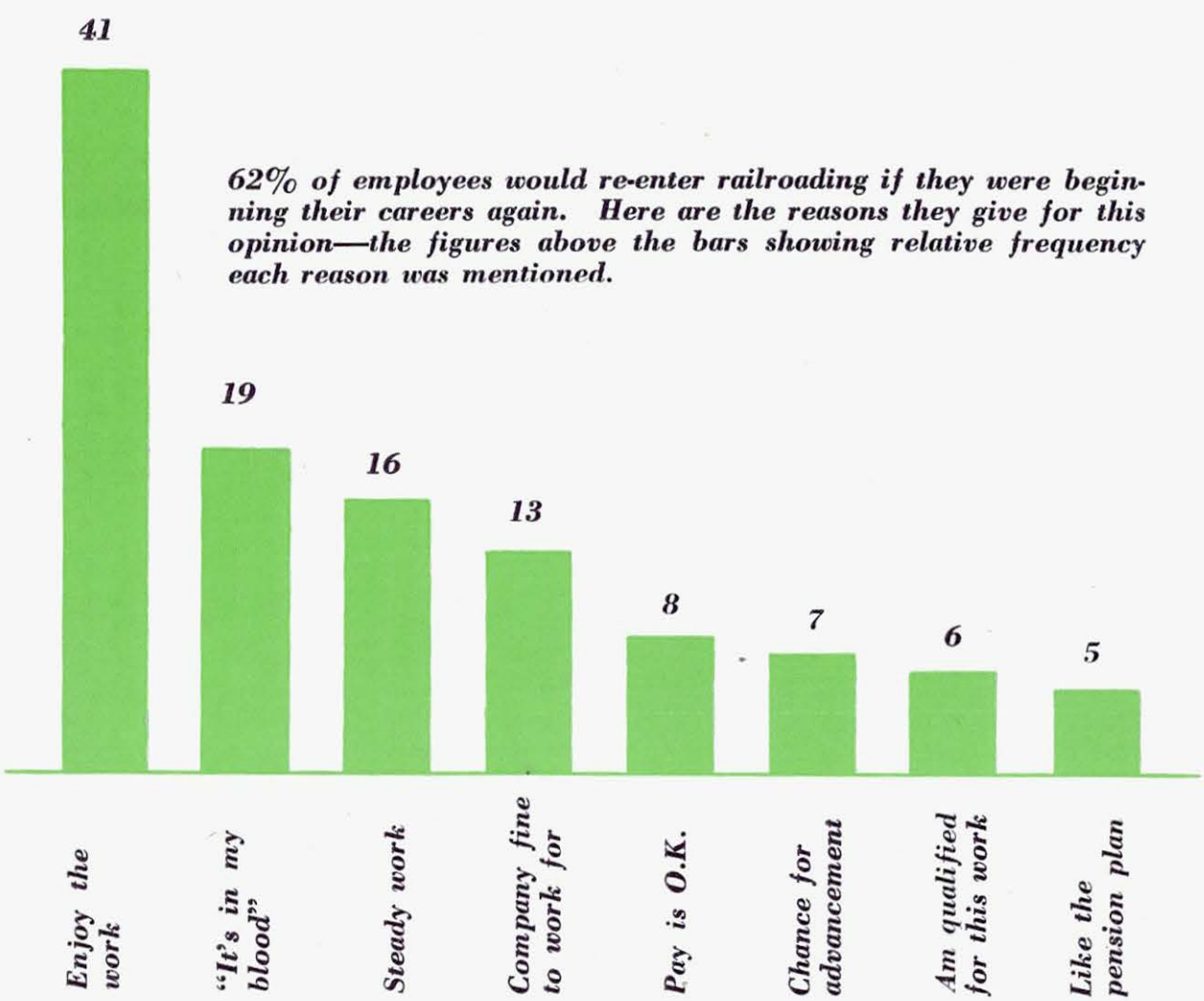
March 23, 1946

What Employees Think About Their Jobs and Railroad Service

THE *Railway Age* and two associated publications, *Railway Engineering & Maintenance* and *Railway Mechanical Engineer,* engaged the services of the Opinion Research Corporation to conduct a survey of the attitude of railway employees toward their jobs and to the railway industry and its problems. Many of the noteworthy revelations of this canvass of employee opinion were set forth in an article in *Railway Age* of March 2, page 445. The remainder of the significant disclosures of this study will be outlined herein.

Why Employees Like Their Jobs

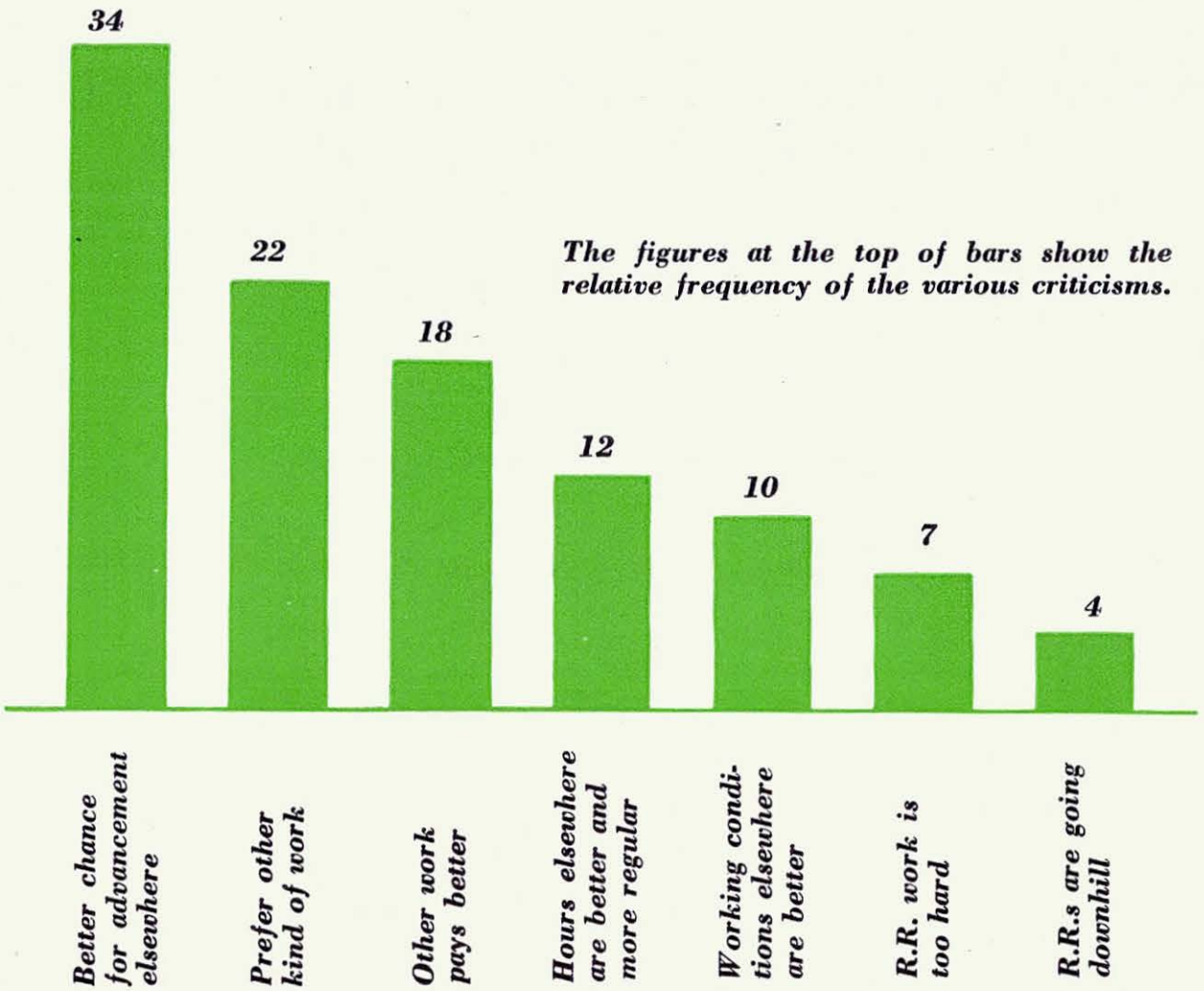
62% of employees would re-enter railroading if they were beginning their careers again. Here are the reasons they give for this opinion—the figures above the bars showing relative frequency each reason was mentioned.



Additional single copies of this article, and of the earlier (March 2) article, reporting the results of this survey, are available without charge—as long as the limited supply lasts—to properly interested persons who will use their letterheads in making their requests. Prices for quantities on application. Address: Editor, Railway Age, 30 Church street, New York 7.

Faults Found with Railroad Employment

31% of employees say they wouldn't go to railroading again if they were starting all over—and this chart shows the reasons they give for their unfavorable opinion of their work.



Readers of the earlier article will recall that five out of eight railroad employees, when asked if they would enter railroading if they were starting their careers all over again, answered in the affirmative. The exact percentages in reply to this question were as follows: Would go to railroading again, 62 per cent; would not, 31 per cent; don't know, 7 per cent.

Of the 31 per cent who said they would not reenter railroading, the principal reasons given for their unfavorable opinions were as follows (with the number after each criticism indicating the relative frequency with which that observation was made): Better opportunities for advancement elsewhere (34); prefer another kind of work (22); could make more money elsewhere (18); would like better or more regular hours (12); would like better working conditions (10); railroad work is too hard (7); railroads are going downhill (4).

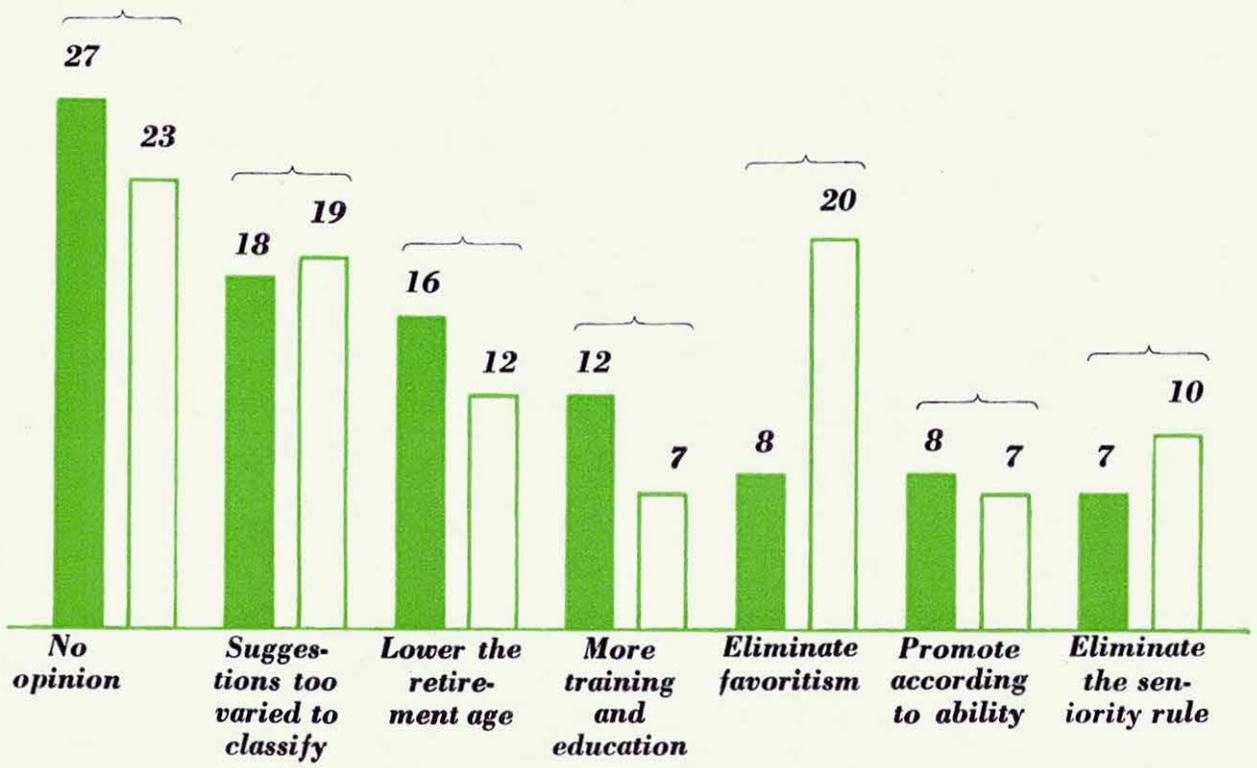
Of the 62 per cent who like railroading as a career, the principal reasons they give for their favorable opinion are as follows (with the relative frequency of each reply indicated by the figure following it in parentheses): Enjoy the work (41); "railroading is in my blood" (19); steady employment (16); company is "fine to work for" (13); pay is satisfactory (8); chances of advancement (7); am qualified for the work (6); like the pension plan (5).

Topics Which Interest Employees Most

Respondents were asked: "If you had a half-hour to talk to the president of your railroad, what things would you most want to talk to him about?" The principal replies, with the relative frequency of each shown in parentheses, were as follows: Wages, pensions, and Sunday and holiday pay (22); better working conditions (19); improvements in equipment and service (19); no opinion (18); shorter hours and better shifts

How to Improve Chances for Promotion

Employees who believe that chances for promotion aren't satisfactory were asked how to improve these chances. This chart shows their answers. Figures at top of columns give relative frequency each suggestion was made. The solid bars show the answers of employees who say chances are "just fair." The columns appearing only in outline record the opinions of employees who say chances are "not very good."



(6); railroading in general (6); future of the company, how to attract new business (5); greater safety for employees and passengers (4); personal problems (4).

The various things mentioned by employees when asked what changes they would suggest to make their jobs more satisfactory were reported in the earlier article on the results of this survey (issue of March 2, page 453). Especially significant in the reaction to this question was the fact that half of the employees had no suggestions to offer for making their jobs more attractive, while only one employee in five mentioned higher wages.

Asked what they think of the chances for promotion in railroad work, 40 per cent answered "good," while 30 per cent said "just fair," and 22 per cent said "not very good." There were 7 per cent who gave qualified answers and 1 per cent had no opinion.

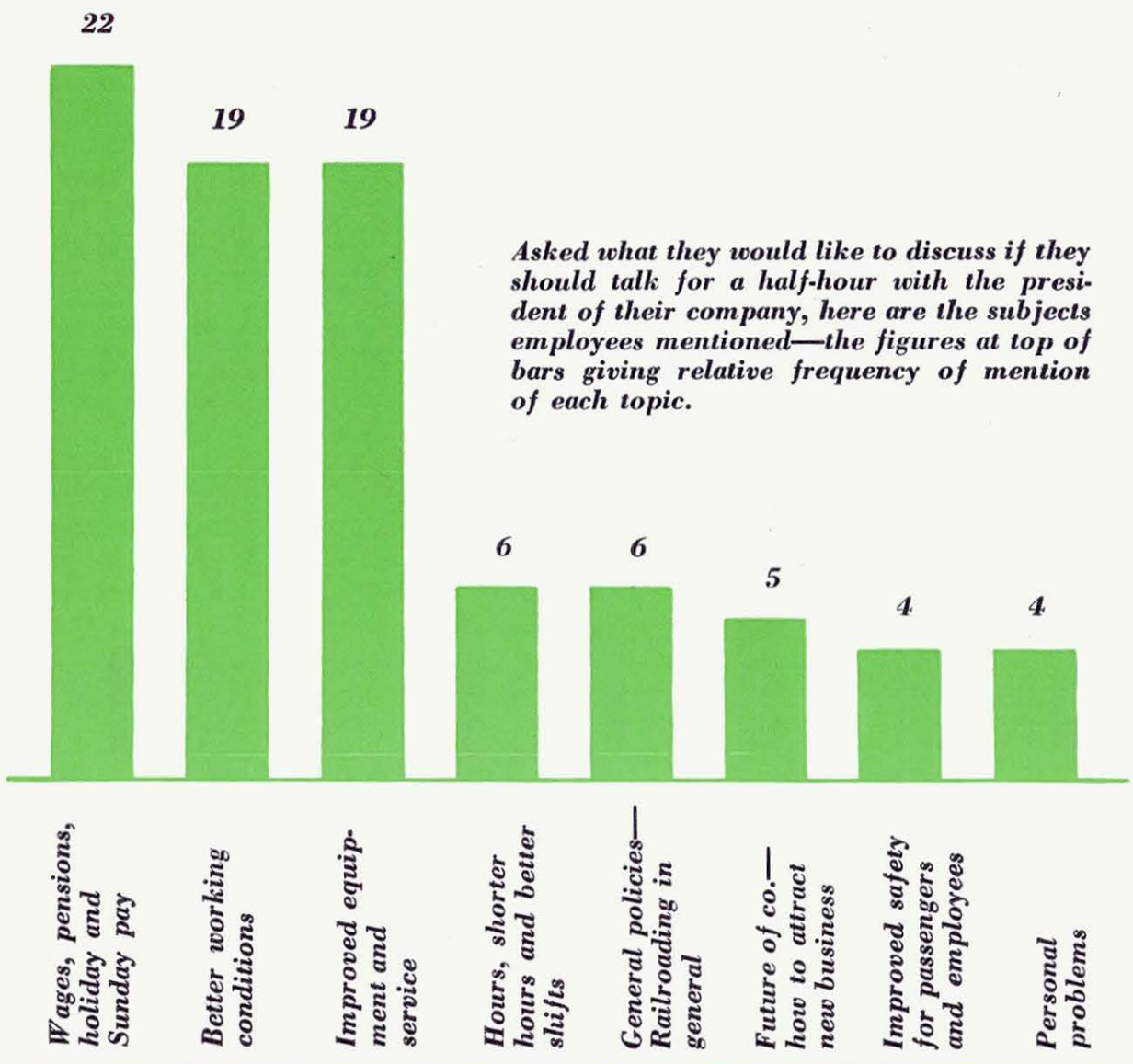
Chances of Promotion

Asked what they think of the chances of promotion in railroad work, 40 per cent of employees say the chances are good.

"Lower the Retirement Age"

Asked what might be done to improve chances for promotion, 45 per cent of those who thought chances of promotion "just fair" either could offer no suggestions at all, or gave answers too diverse to classify; 16 per cent of this group favored lowering the retirement age as a means of improving the chances for promotion; 12 per cent called for more education and training; 8 per cent said "eliminate favoritism"; 8 per cent said "promote according to ability"; 7 per cent said "eliminate seniority"; 4 per cent said "expand the business."

Topics in Which Employees Are Interested



Asked what they would like to discuss if they should talk for a half-hour with the president of their company, here are the subjects employees mentioned—the figures at top of bars giving relative frequency of mention of each topic.

Of the group which characterized chances of promotion as "not very good," 42 per cent could either offer no suggestions for improving these chances or gave answers too varied for classification; 12 per cent asked for a lower retirement age; 7 per cent asked for more education and training; 20 per cent said "eliminate favoritism"; 7 per cent said "promote according to ability"; and 10 per cent said "eliminate seniority."

Where Seniority Rule Is Criticized

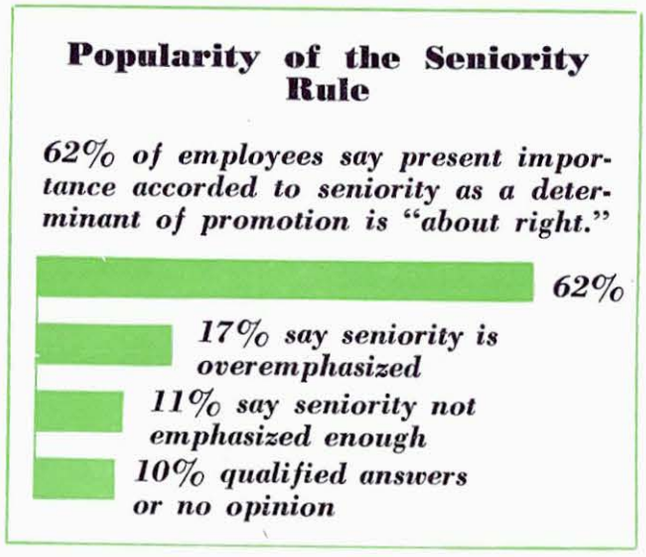
Almost three employees out of four are either quite satisfied with the present seniority rule for promotion (62 per cent), or do not believe that the seniority rule is applied with sufficient vigor (11 per cent). However, 17 per cent believe that too much importance is attached to seniority, while 10 per cent either give qualified answers or have no opinion. As might be expected, it is among the younger employees where the greatest dissatisfaction with the seniority rule occurs. Of employees under 30 years of age, 38 per cent believe the railroads pay too much attention to seniorty; of those 30-44 years of age, only 18 per cent are critical; and the ratio of criticism declines to 13 per cent for the 45-54 age group and to 10 per cent among those 55 years or more in age. Criticism of the seniority rule runs below the average in the South and the Midwest and considerably above the average in the Far West. There is more dissatisfaction over the seniority rule among employees in the larger cities than in the smaller places; and acceptance of the seniority rule runs higher among train, engine and yard crews than among other classes of employees.

Dissatisfaction with opportunities for promotion are also more pronounced among the younger employees. Of

those under 30 years of age, 27 per cent are critical. The ratio declines to 23 per cent with 30-44 age group, to 21 per cent with the 45-54 group, and to 16 per cent among employees 55 years of age and older.

On the question of training for their jobs, 57 per cent of employees believe that present arrangements are satisfactory; 33 per cent say they could be better; and 10 per cent either have no opinion or give qualified answers. Asked how present provisions for employee training could be improved, 33 per cent of the group who are critical of existing training say they now receive no training at all; 16 per cent believe the training they get should be more thorough; 13 per cent believe the training period should be lengthened; 12 per cent say more capable instructors are needed; 7 per cent believe employees should be trained before starting to work; 5 per cent ask for a system of apprenticeship; 4 per cent want pay while learning; 14 per cent have views too varied to classify; and 4 per cent have no opinion.

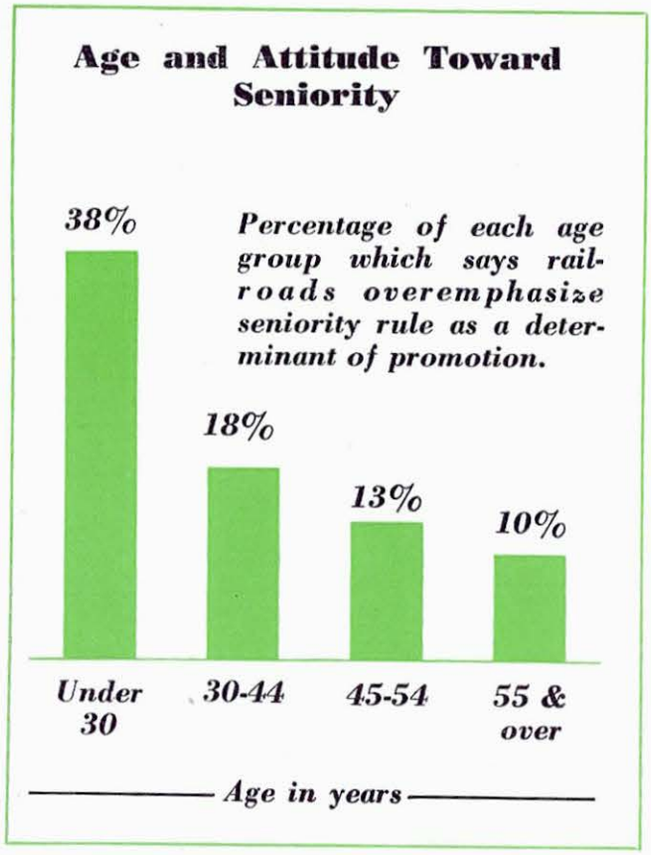
In the earlier article recording the results of this survey, it was reported that almost three out of four employees believe railway officers are "doing as much as they should" to meet the threat of competition from other forms of transportation (issue of March 2, page 448). One-fourth of the employees, however, say that railroad officers are "less progressive" than the managers of air and truck lines. Three employees out of five say railway officers are as progressive as those of rival types of transport, and approximately one employee in six either has an inconclusive opinion or none at all on this point.


Popularity of the Seniority Rule
62% of employees say present importance accorded to seniority as a determinant of promotion is "about right."
62%
17% say seniority is overemphasized
11% say seniority not emphasized enough
10% qualified answers or no opinion

Inter-Union Rivalry

This survey did not go into questions regarding union policy to any extent because, as stated in the March 2 article, membership in railway unions being voluntary, the regard in which employees hold these organizations is evidenced by the fact that they have joined them and continue their affiliation. One question regarding union policy was asked, however, viz.: "Sometimes a union tries to get more members by asking men in other unions to join theirs. Do you think it's all right for unions to do this or not?"

This is *one* question of union policy to which, heretofore, an answer has not been available—and that it is important is attested by the annual report of the National Mediation Board (see *Railway Age* of March 16, page 584), wherein the opinion is expressed that so-called "raiding" by one union of another has been carried on to an excessive degree. *Railway Age* believed



the views of employees on the question of inter-union membership rivalry would be significant, because some railway officers close to such questions believe competition of this kind to be a prolific source of friction in employee relations. Be that as it may, here is how the employees themselves feel about it:

The respondents who believe the practice to be "all right" were 22 per cent of the total; those who say the practice is "not all right" were 57 per cent; 16 per cent had no opinion; and 5 per cent gave qualified answers. The principal reasons cited by the minority who condone the practice are (with the relative frequency of each reason indicated by the figure in parentheses): A man should have a free choice of unions (33); the practice strengthens the union (31); competition is good for unions (16).

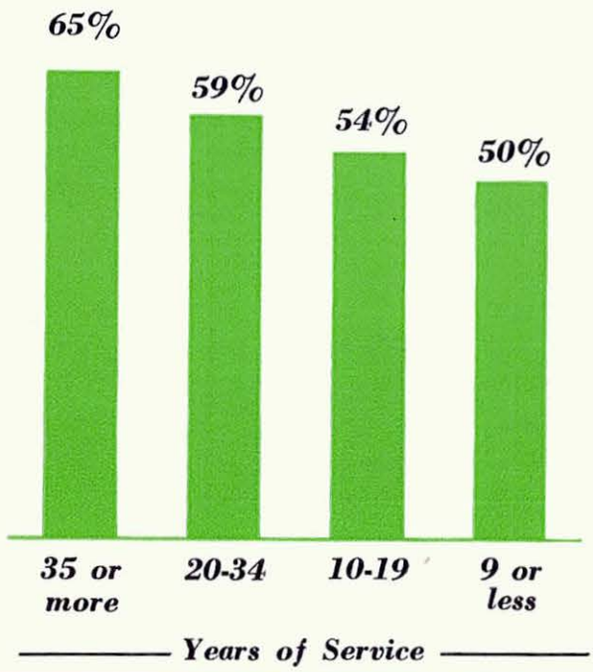
The two principal reasons—with the relative frequency each was cited indicated by the figures in paren-

theses—why employees who oppose the practice view it with disfavor are: An employee should be represented by the union of his own craft—each craft has its own problems (47); union rivalry for members "causes friction," "destroys unity" (16).

There was not a great deal of difference among the five principal classes of employees on this question. The "officers and clerks" category voted 60 per cent that for one union to try to seek to attract members away from another union is "not all right"; 59 per cent of maintenance of way employees also voted this way; 56 per cent of train and yard crews were against the practice, as were 53 per cent of shop and stores employees and 62 per cent of transportation employees (except train, engine and yard).

Inter-Union Rivalry Not Favored

Percentages by which groups of varying years of service declare themselves opposed to a union's seeking to take members away from another union.



The divergence in opinion among groups of varying seniority was much wider. Employees of 9 years' service or less who opposed such union rivalry were 50 per cent of the total. As seniority increases, opposition to the practice mounts, with employees of 35 years' service or more being 65 per cent in opposition. There is no significant difference in opinion from region to region except in the Far West, where opposition mounts to 67 per cent, as compared to a range of 53-56 in the East, Midwest and South.

On the question of the railroads' service to patrons, 61 per cent of employees believe that shippers "are always treated with as much consideration as they should be" and 70 per cent say that passengers are always so treated. (It is significant, perhaps, to note that in the 1945 A.A.R. survey of public opinion, 41 per cent of recent travelers by rail said they had noted a let-down in the quality of service received at the hands of railway employees). Further on the subject of freight service, 25 per cent of the respondents do not believe that shippers are always treated with proper consideration, and 14 per cent express no opinion. As to passenger service, 24 per cent of employees believe passengers are not always treated with adequate consideration, while 6 per cent have no opinion.

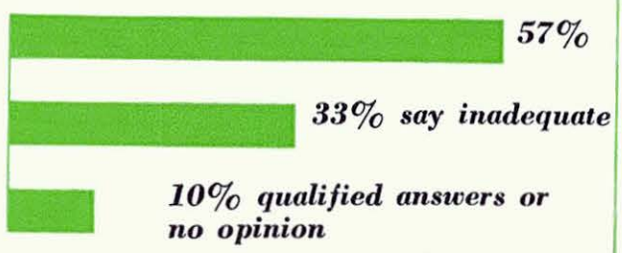
Are Patrons Served Properly?

On this question of service to patrons, there is not a very great interdepartmental difference in the opinion of employees. There is, however, a marked difference in the opinions of groups of varying seniority—with the "old heads" being more satisfied than the younger ones. For example, only 52 per cent of employees with less than three years' seniority are satisfied with the quality of service to shippers, while 73 per cent of those with 35 years or more believe the shippers are receiving all the consideration they have coming to them. As to passenger service, 62 per cent of the lowest seniority group (less than three years' service) believe patrons are as well treated as they deserve to be, while 77 per cent of those with 35 or more years of service are satisfied with treatment accorded to travelers.

There are noteworthy differences on this question, also, as between territories. In the East 68 per cent of employees believe shippers are sufficiently well treated, with only 54 per cent of employees in the South holding this view—with employees in the Midwest and Far West occupying a position midway between the two extremes. As for passenger traffic, it is again the East which shows the highest ratio of employee approval of existing treatment of customers. The ratio is 76 per cent. In the South it is 72 per cent, in the Midwest 68 per cent, and in the Far West 59 per cent.

Opinions on Job Training

57% of employees say present provisions for training employees for their jobs are adequate.



These ratios, of course, do not necessarily evidence a greater degree of complacency among employees in one territory than in another, because it might well be that there is some absolute variation in the quality of service as between territories—especially as traffic may be more congested in one area than in another.

Employees were asked whether they believe that treatment of patrons can be left to the discretion of employees or whether, on the other hand, special rules are needed for employees' guidance. Only 28 per cent feel that special rules are unnnecessary; 47 per cent believe such rules *are* required; and an additional 19 per cent say that both rules and the exercise of the employees' individual judgment are called for. Only 6 per cent of the respondents qualified their answers or expressed no opinion.

Respondents were then asked whether the railroads should provide "special training schools on how to handle the public," and 63 per cent expressed themselves in the affirmative; 29 per cent said "no"; and 8 per cent had no opinion.

On the question of whether or not special training schools are needed to teach employees how to deal with the public, the category of "officials and clerks" came in with the highest ratio of affirmation (69 per cent). Train, engine and yard crews were the lowest occupational category in their approval of such instruction (58 per cent affirmative). Employees of low seniority are more receptive to this schooling than the "old heads" (66 per cent of those with less than three years' service approving, while 58 per cent of those with 35 or more years of service endorse the suggestion).

Territorially, the ratios favoring formal schooling in public contacts are as follows: Midwest 60 per cent; South 62 per cent; East 63 per cent; Far West 69 per cent.

Age, Geographical, and Occupational Variations

In the earlier article reporting the results of this survey (March 2 issue) it was stated that the differences in replies made to questions by employees were not especially noteworthy from one department to another, or from one territory to another. Differences between age and seniority groups were somewhat more marked, but even these were not unsually pronounced in most cases. There were, however, some differences as between territories, departments and ages which were great enough to be of some importance. A few of these have already been noted heretofore in the present article. It now remains to review the various questions reported upon in the March 2 article and to note the more significant variations in answers as between different categories of respondents.

Possibly the most interesting questions about which there may be some curiosity as to interdepartmental variations in opinion are those having to do with "full crews" and limitation of train length. It will be remembered that 79 per cent of employees favored the "full crew" requirement and 64 per cent favored train length limitation. The departmental affirmative expressions on these two questions were as follows:

	% favoring "full crews"	% favoring "train limit"
Officials and clerks	63	44
Maintenance of way employees	78	58
Shop and stores employees	83	65
Train, engine and yard	86	75
Other transportation employees	77	69

The differences in opinions on these two controversial questions as between territories and as between older and younger employees were not great enough to be of any particular significance.

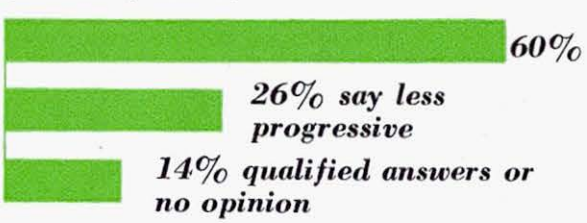
On the question of whether the railroads did the best war job of which they were capable—on which employees as a whole voted 89 per cent "yes"—there was some difference in the answers by age groups. Employees with less than three years' railroad service voted 83 per cent in the affirmative—and the ratio of "yes" answers rose with length of service, reaching 92 per cent on the part of employees with 35 years or more of service.

Younger Men More Friendly to Socialization

Among employees as a whole there were only 9 per cent who believed that the government would have done a better job of war-time railroading than private managements did—but, by seniority groups, employees with less than three years' service voted in favor of government ownership to the extent of 15 per cent of the total, and this percentage dwindled as length of service increased, being only 5 per cent for employees with 35 or more years of service. Friendship for war-time government operation was only 3 per cent among employees residing in cities of under 25,000 population, and was

Leadership for Competition

60% of employees say railway officers are as progressive as officers of other forms of transport.



much higher in larger places (e.g., 11 per cent in cities of over 500,000). There was less friendliness toward government operation in the Midwest (6 per cent) than in other territories (the South leading with 12 per cent). Tolerance of peace-time government operation was only 3 per cent by employees as a whole—but here again the acceptance of such socialization was highest among the younger employees and among those living in large cities. It was much higher in the South (8 per cent) than in other territories. Tolerance of government ownership ran lowest in the "officials and clerks" occupational classification, and highest in the maintenance of way, mechanical, and stores departments.

On the question of whether chances for promotion in in the railroad industry are good or not (on which 40 per cent of all employees voted "good"), the "old heads" voted "yes" more frequently than did the younger employees. For example, 36 per cent of employees with less than three years of service said "yes" while affirmative answers were given by 48 per cent of employees with 35 or more years of service.

It will be recalled that 49 per cent of employees said "no" when asked if there were any change which could make their jobs more satisfactory. This "no" answer was lower (44 per cent) than the average by train, engine, and yard employees. It was lower also (41 per cent) with employees of less than 9 years' seniority. It was lower (41 per cent) in cities of over 500,000 population; and it was much lower (only 37 per cent) in the Far West than in other territories.

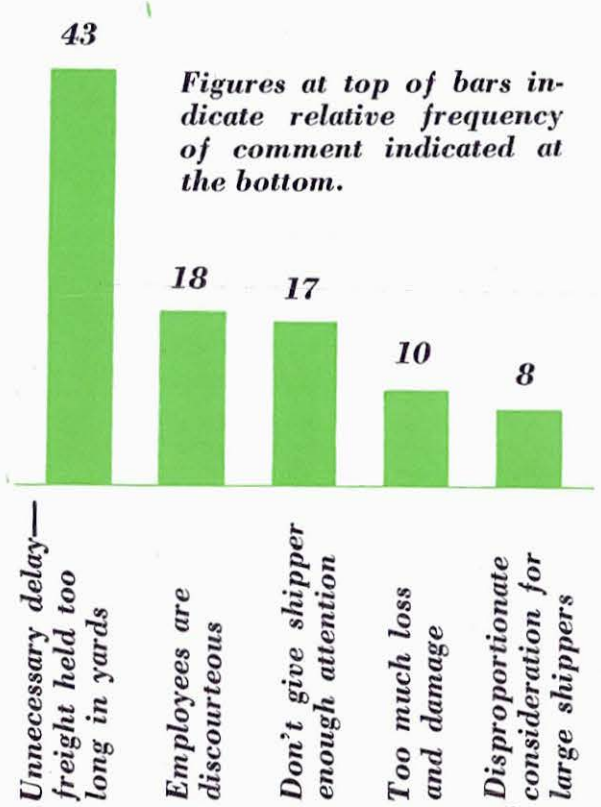
The departmental differences in suggestions for making their jobs better are rather noteworthy, and the tabulation as compiled by the Opinion Research Corporation is as follows:

	Better working conditions	Higher wages	Better hours	New equipment and machines	Better labor-management relations	Give us more workers	More opportunity for advancement	Too much to do	Other	Don't know
ALL WORKERS	21%	21	18	13	12	9	7	6	8	3
Officials and clerks	16%	25	14	1	17	9	14	11	9	2
Way and structure workers.	25%	23	14	7	9	16	5	7	14	4
Shop and stores workers....	27%	20	11	17	11	10	7	5	4	3
Train and yard crews.....	16%	19	27	17	13	4	5	3	10	4
Other transportation workers	27%	23	21	13	7	19	3	10	6	1

Percentages add to more than 100 because of multiple answers.

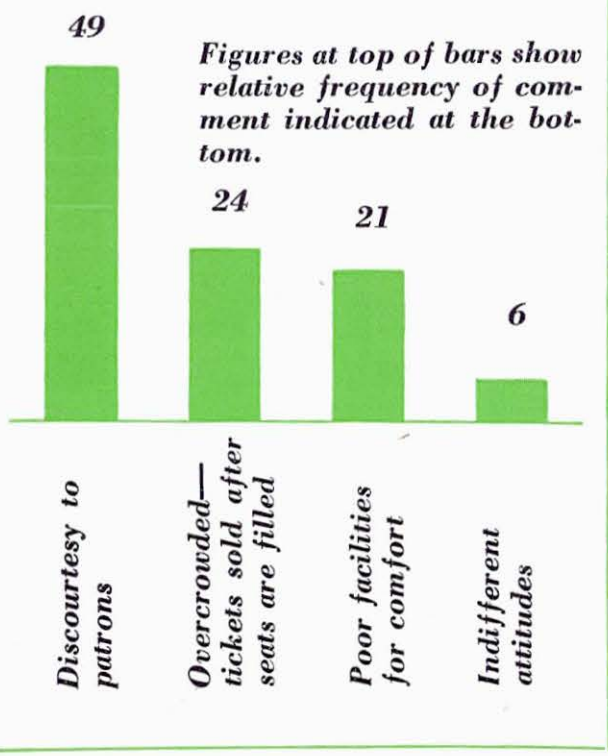
Service to Shippers

Only 25% of employees believe shippers are treated with inadequate consideration—and here are the principal criticisms by those who believe there is room for improvement.


43
18
17
10
8
Figures at top of bars indicate relative frequency of comment indicated at the bottom.
Unnecessary delay—freight held too long in yards
Employees are discourteous
Don't give shipper enough attention
Too much loss and damage
Disproportionate consideration for large shippers

Service to Passengers

Only 24% of employees believe passengers are treated with insufficient consideration—and here are the principal criticisms made by those who have such suggestions to offer.



It will be noted, for example, that higher wages is the principal interest of the "officials and clerks" category,

but that, for train service employees, the desire for better hours dwarfs their interest both in more money and in better working conditions.

On the subject of training employees for their jobs, on which 57 per cent of employees as a whole said that present arrangements are "good enough" there was a below-average affirmative response (52 per cent) by employees under 30 years of age and an above-average reply (64 per cent) by employees 55 years old or more. The "good enough" answer was below average (52 per cent) in the Far West.

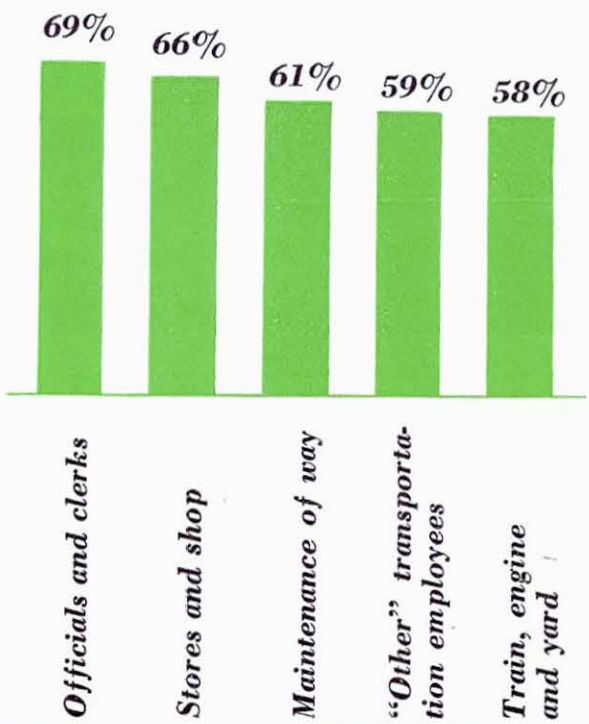
Younger Men More Critical of Superiors

Of employees as a whole, 66 per cent gave a "good" rating to their immediate superiors—but younger employees and those in cities of over 500,000 population fell far below this average. (The affirmative was 51 per cent among employees with less than three years' service and 59 per cent among those living in the largest cities).

On the matter of the adequacy of present pension arrangements, which 57 per cent of employees as a whole said were "unsatisfactory," the dissatisfaction ran much higher among older employees and in the larger cities than among younger employees and in smaller communities.

Is Schooling in Public Relations Needed?

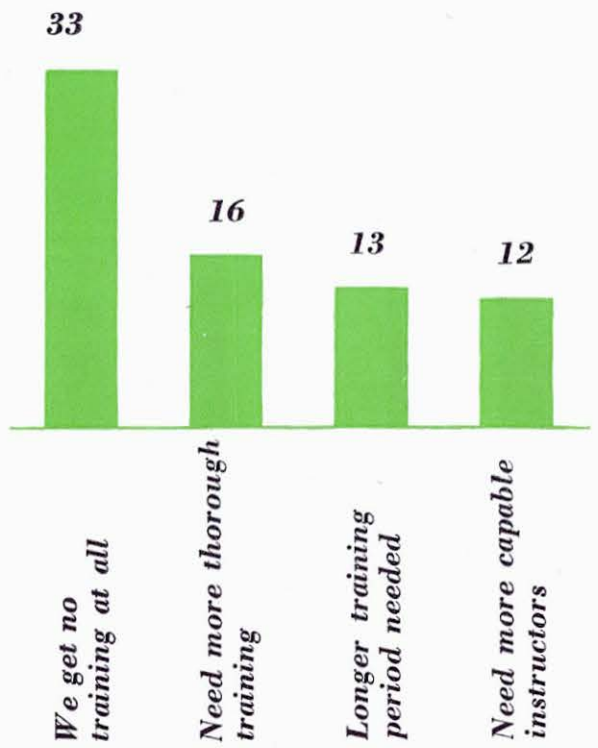
63% of employees believe that the railroads should operate special schools to train employees in proper treatment of the public. This chart shows the percentage of affirmative opinion on this question by occupational groups.



Less than one-third (31 per cent) of all employees realized that the costs of unemployment insurance are borne entirely by the railroads. The ratio of employees possessing this knowledge was highest (39 per cent) in the "officials and clerks" category and lowest (26 per cent) among shop and stores employees. It was far lower (only 20 per cent) in the South than in other territories.

How Training Could be Improved

Suggestions were asked from those who say present arrangements are inadequate —figures at top of bars indicate relative frequency of the principal recommendations.



How Earnings Estimates Varied

Employees as a whole made a median estimate of 27 per cent as the railroads' earnings on the investment in 1944 (which were actually a little more than 4 per cent). The "officials and clerks" came closest to actuality with a median of their estimates at 14 per cent, while train, engine, and yard employees were furthest away, the median of their guesses being 34 per cent. In stating an opinion as to what the railroads *ought* to be allowed to earn, the median was the same for all classes of employees—whether by occupation, by seniority, by territory or by age; all classifications showed the same median figure, i. e., 10 per cent.

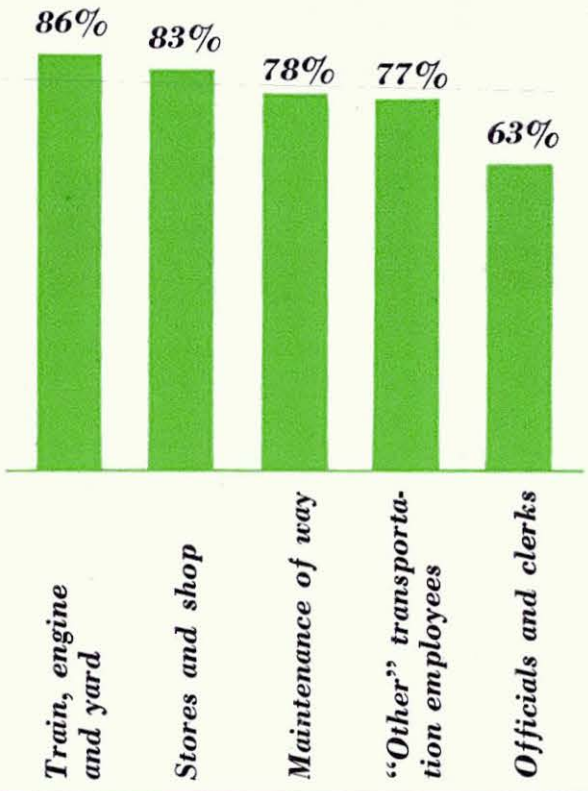
Seven out of ten employees expressed a belief that the railroads were doing all they could to meet post-

war competition from other agencies of transportation—but affirmative responses considerably below this average were given by train, engine and yard and "other" transportation employees (66 per cent for both groups); by younger employees (e.g., 57 per cent by those under 30 years of age), and by railroaders in the Far West (58 per cent affirmative).

On the question of whether railroad managements are as progressive as those of rival transport agencies—in which the overall "yes" answer was 60 per cent—below-average opinions were given by younger employees (e.g., 45 per cent by those under 30 years of age) and by employees in the Far West (50 per cent).

Sentiment Favoring "Full Crews"

79% of employees approve of a "full crew" requirement. This chart shows the ratio of affirmative opinion by departments.



Far West Discounts Competition

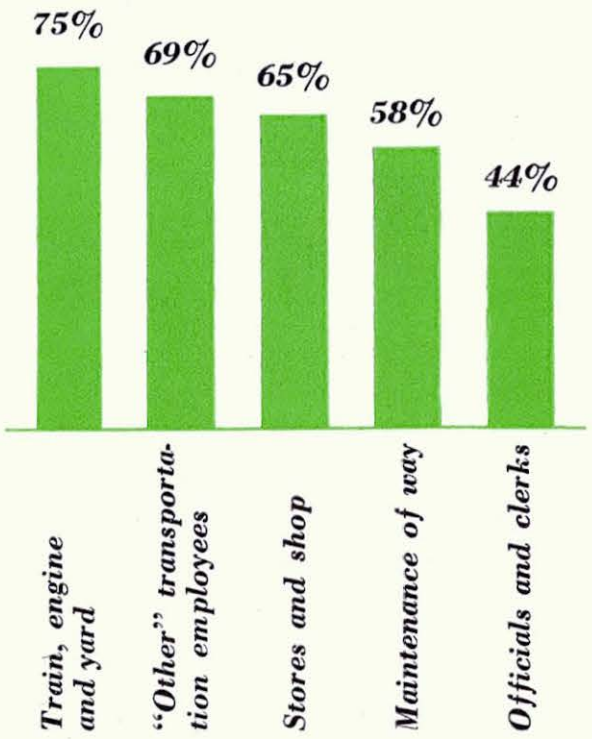
Strangely enough, in the light of the foregoing, only 32 per cent of railroad employees in the Far West expect competition from other agencies of transportation to be severe, as compared to 42 per cent for employees as a whole.

Two-thirds of employees said there is a difference between the taxes paid by railroads and those assessed on rival agencies of transport which use public property as a place of business—but the ratio of employees of low seniority (less than three years) who gave that answer was only 37 per cent. Only three out of five employees had ever heard of "federal aid" for highways and waterways, and younger employees and those in the Midwest had batting averages (53 per cent) considerably below par on this question. A majority of the employees who had heard of such federal aid thought it a "good idea." Inter-class departures from this average were not great, except in the Far West, where 70 per cent of the railroad employees who know of this assistance to rival agencies of transportation believe such assistance to be "a good idea."

On the question of whether or not employees believe that they now receive sufficient information about the railroad business, it will be recalled (from the March 2 article) that 73 per cent said "yes." The "officials and clerks" were most positive on this point, their ratio of affirmative answers being 86 per cent. New employees were somewhat less positive (64 per cent) and so were those in the Far West (63 per cent).

Would Limit Train Length

64% of employees as a whole favor regulatory limit on the length of trains. This chart shows the percentage of approval of this restriction by departmental categories.



The Questionnaire

The size of the sample, its composition, and the reasons given by the experienced Opinion Research Corporation for the degree of accuracy claimed for it were set forth in the earlier article (March 2 *Railway Age*).

The specific questions asked, with a brief recapitulation of the answers, are given below. The answers to all these questions except one or two, the practical importance of which has disappeared (such, for instance, as the one dealing with land-grant rates), have been reported and analyzed either in this article or in the one which appeared in the March 2 *Railway Age*. For the reader's convenience, however, as each question is given below, a brief summary of the nature of the answers is repeated, by way of recapitulation.

1. *If you had a half-hour to talk to the president of your railroad today, what things would you most want to talk with him about?*

Topics most often mentioned were wages, pensions, holiday and Sunday pay; better working conditions; improvements in equipment and service; hours, shorter hours, and better shifts; railroading in general; future of the company—attracting new business; safety of passengers and employees.

2a. *Now that the war is over, do you think the railroads did the best war job they could, or do you think they could have done a better war job?*

89 per cent of employees say they did the best they could.

2b. *Do you think the railroads would have done a better job or a worse job if they had been operated by the government during the war?*

Only 9 per cent of respondents believe that government operation would have been a better war-time expedient.

2c. *Why do you feel that way?*

About half of those who favor government operation gave "greater efficiency" as their reason.

2d. *If "could have done better" is your answer to 2b, would you say government operation would be better in peacetime also, or not?*

Only 3 per cent of employees say "yes".

3a. *If you were starting all over again would you rather go to work for the railroads or for some other kind of business?*

62 per cent of all employees would go to railroading.

3b. *Why do you feel that way?*

The principal reasons why those who like railroading like it are that they "enjoy the work"; it's "in their blood"; employment is steady; company is fine to work for. The reasons given by those who would rather be in some other work are: Better opportunities for advancement elsewhere; prefer other work; more money in other work; better hours; better working conditions.

4a. *What would you say about the chances to get ahead on the railroads; do you think the chances for promotion are good, just fair, or not very good?*

40 per cent say chances for promotion are "good"; 30 per cent say "fair"; 22 per cent say "not very good".

4b. *If "just fair" or "not very good" are your answers on 4a, what do you think might be done to provide a greater chance for promotion?*

Suggestions for improvement include: Lower retirement age; more education for jobs; elimination of favoritism; promotion according to ability; elimination of the seniority rule.

5. *As you know, the railroads pay more attention to seniority in promotion, bidding on runs, and so forth, than most other industries do. Would you say that the railroads place too much importance or not enough importance on seniority?*

Only 17 per cent of employees believe the seniority rule for promotion is overemphasized on the railroads and 11 per cent believe it is not emphasized enough.

6a. *Now, most railroads are rather big companies and the employees are spread out so they don't always get to know the top officials. Who is the highest official of your company that you have met or talked with—we don't mean his name, but what job did he hold?*

30 per cent of all employees say they know the president or a vice-president of their company; and only one-fourth of them say they are unacquainted with an officer of the rank of superintendent or higher.

6b. *What kind of impression did he make on you?*

89 per cent of respondents have a favorable impression of the highest officer of their company with whom they are acquainted.

7a. *Is there any change the management could make which would make your job more satisfactory?*

49 per cent of employees said they had no suggestions to offer to management, of means for bettering their jobs.

7b. *If "yes" is your answer to 7a, what might be done to make your job more satisfactory?*

Principal suggestions were: Better working conditions; higher wages; better hours; new equipment and machines; better labor-management relations.

8a. *Do you think your company gives its employees good enough training for their jobs, or could this training be better?*

57 per cent of employees say more training needed.

8b. *If "could be better" is your answer to 8a, how could it be improved?*

One-third of employees who do not believe training facilities are adequate say that no such facilities at all are provided.

9. *Would you rate your foreman or supervisor as good, average, or poor in his job?*

Two-thirds of employees rate their immediate superior as definitely good, and an additional one in five says "average".

10a. *How about the present method of payments for retired railroad workers, that is, the pension arrangements—would you say they are satisfactory or not satisfactory?*

57 per cent of employees say "unsatisfactory".

10b. *If "not satisfactory" is your answer to 10a, what do you think should be done to make the pension arrangements more satisfactory?*

The principal suggestions for improvements in the pension system are that payments should be larger and that the retirement age should be reduced.

11a. *Do you think the unemployment insurance provided for railroad employees is satisfactory or not satisfactory?*

53 per cent of employees say "satisfactory".

11b. *If "not satisfactory" is your answer to 11a, what changes would make it better?*

"More money" is the suggestion far outnumbering all others.

11c. *Would you say there is a deduction from railroad employees' pay to provide unemployment insurance or is all the cost paid by the railroads?*

Less than one-third of the employees realize that the railroads pay the whole cost of this insurance.

12. *Would you say the railroads in this country are owned by a few hundred investors or by many thousands of investors?*

Two-thirds of the respondents answer correctly that railway owners number many thousands.

13a. *Is it your impression that over the period of the past fifteen years or so the railroads made a profit on the money invested in them, broke even, or lost money?*

73 per cent say "made a profit"; 11 per cent say "broke even"; 8 per cent say "lost money".

13b. *Do you think the railroads are now making a profit, breaking even, or losing money?*

93 per cent say they are making a profit now.

13c. *If "making profit" is your answer to 13b, just as a guess, about what per cent of profit would you say the railroads made during the last year?*

The median estimate of the rate of the railroads' "last year's" earnings (i. e., 1944) was 27 per cent.

13d. *What per cent of profit on the money invested in them do you think the railroads should make?*

The median of estimates was 10 per cent.

14a. *Do you think the officers of your company are doing as much as they should to make sure that the railroads will meet postwar competition from other forms of transportation, or not?*

The answer of seven employees out of ten is "yes".

14b. *In comparison with officers of competing kinds of transportation such as the airlines and truck lines, would you say the officers of your company are as progressive or not as progressive?*

Three out of five say "as progressive".

14c. *Why do you feel that way?*

Those who are critical of the railroads' progressiveness say the carriers are not getting new equipment and adopting new methods, and those giving a favorable answer say the railroads *are* doing these things.

15. *Now that the war is over, do you think that competition from other forms of transportation will be severe enough to bring hard times to the railroads and their employees, or not?*

42 per cent of employees expect hard times from competition and 40 per cent do not.

16a. *Would you say that before the war the railroads, bus lines, truck lines, airlines and waterways all had an equal chance to make a fair profit, or not?*

Almost two employees out of three (64 per cent) believe that all forms of transportation had an equal chance to make a profit.

16b. *If "did not have equal chance" is your answer to 16a, what do you think should be done to make sure of fair competition in the operation of railroads, airlines, waterways, and bus and truck lines now that the war is over?*

The most frequent answer to this question was: "Equalize taxation and operating costs."

16c. *Can you think of the name of any candidate for public office in local or state elections who has been in favor of fair competition for all types of transportation?*

Only one employee out of six could do so.

17a. *Would you say there is a difference in the way the railroads are taxed, and the taxation on highway and waterway transportation?*

68 per cent of employees answered correctly "yes".

17b. *If "is a difference" is your answer to 17a, what is this difference?*

Two employees out of five said either that the railroads' taxes are higher than those of the other transportation agencies, or that these other agencies are not taxed. An additional one employee out of four pointed out that the railroads maintain their own roadways.

18a. *Do you happen to have heard or read of the use of government money, that is, federal aid appropriations, for the building of highways and airways?*

One employee out of three had never heard of this.

18b. *If "yes" is your answer to 18a, do you think such appropriations are a good, fair, or poor idea?*

Of the employees who knew about "federal aid", over one-half said they thought it a "good idea".

19a. *Do you happen to have heard or read of any recent government action about the present method of setting freight rates?*

Only two employees out of five said "yes".

19b. *If "yes" is your answer to 19a, what did you hear or read?*

Only 13 per cent of employees said that there had been a demand for "equalization" of freight rates. The rest of those who said they had heard of discussion of this subject were either indefinite or inaccurate in the kind of discussion they reported.

19c. *Do you think the action the government is taking is justified, or not?*

About half of those who had heard about rate discussion approved government action in this direction.

20a. *Do you happen to have heard or read of land-grant rates?*

Three employees out of five had not heard about these rates.

20b. *If "yes" is your answer to 20a, have you heard or read of a proposal to repeal the land-grant rates?*

Only slightly more than one quarter of the employees had heard of this effort.

20c. *If "yes" is your answer to 20b, do you think this repeal would be a good, fair, or poor idea?*

Only one employee in six both knew of this movement and approved it.

21a. *How do you feel about full crew regulations—do you think they are a good thing or a bad thing for the railroads?*

79 per cent of employees approved this limitation.

21b. *And what about regulations that prohibit having more than a certain number of cars on a train—would you say they would be a good thing or a bad thing for the railroads?*

Almost two-thirds of employees approved.

21c. *If "good thing" is your answer to either 21a or 21b, well, it has been said that when these regulations are passed the railroads have to increase freight rates because of the increased cost, and then lose business because of the higher rates. Do you agree with this or not?*

Half of all employees do not believe that these restrictions would hurt railroad traffic.

22a. *Do you think that freight shippers who use the railroads are always treated with as much consideration as they should be, or not?*

Three employees out of five say "yes".

22b. *If "no, not treated with consideration" is your answer to 22a, what things have you noticed?*

Delay to shipments, discourtesy by employees, and inattention to customers are the principal criticisms.

23a. *What about passengers on the railroads—would you say they are always treated with as much consideration as they should be, or not?*

70 per cent of employees say "yes".

23b. *If "no, not treated with consideration" is your answer to 23a, what things have you noticed?*

Half of the employees who believe passengers are not always properly treated, mention discourtesy as their principal criticism.

24a. *Would you say it should be left to the railroad employees to give good service to railroad customers or should special rules be made for the employees to follow?*

47 per cent of employees say special rules are needed.

24b. *Well, should the railroads have special training schools on how to handle the public?*

Those who say "yes" outnumber those who say "no" by more than two to one.

25a. *Suppose a new machine is found which will allow one or a few railroad employees to do what several employees formerly did. Do you think it should be used or not?*

Only about one-third of the employees answer this question with a specific "no".

25b. *Why do you feel this way?*

"That's progress" is the reason given by about half of the employees who favor such innovation.

26a. *Sometimes a union tries to get more members by asking men in other unions to join theirs. Do you think it's all right for unions to do this, or not?*

Only about one employee in five expresses definite approval of this practice.

26b. *Why do you say this?*

The principal reason cited by those who disapprove the practice is that employees should be represented by a union of their own craft. Those who approve base their opinion, for the most part, on the freedom of the individual to make his own choice and on the belief that such competition strengthens a union.

27a. *Do you feel that you receive enough information about the railroad business and your own company or not?*

Only one employee in five says "no".

27b. *Where do you hear or read the most information about the railroad business and your own company?*

Newspapers head the list of the sources of information.

27c. *Are there any magazines or papers put out for railroad people that you especially like? (Which ones?)*

Their company "house organ" headed the list of favorite periodicals. *Railway Age* was specifically named by 9 per cent of the respondents.

27d. *Are there any you don't particularly care for? (Which ones?)*

Apparently no answers were received to this question, since the Opinion Research Corporation submitted no figures on it.

28a. *Who would you say gets the bigger share of each revenue dollar the railroads take in—the employees or the stockholders?*

Less than one-half of the respondents gave the correct answer —the employees.

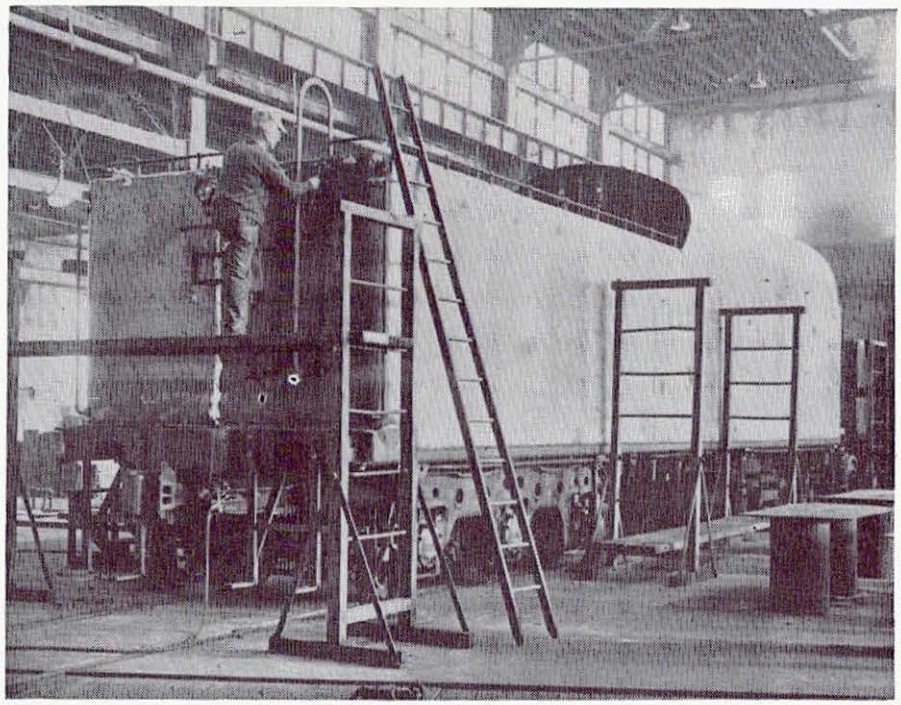
28b. *How many cents out of each revenue dollar do you suppose the employees get?*

The median of the replies to this question was 35 cents (compared to an actual 40.88 cents in 1944).

29. *Just as a guess, about how much money do you think the railroads have put into equipment, trains, tracks, stations and so forth, for each employee they have—that is, if the total amount of money invested in these things were split up among all the employees, about how many dollars would each employee get?*

Only half of those questioned would venture a guess—and the median of their estimates was $9,300, or just about half the actual amount.

Several other questions asked the respondents had to do with their age, occupation, length of service, etc.—and were for the purpose of classification only.



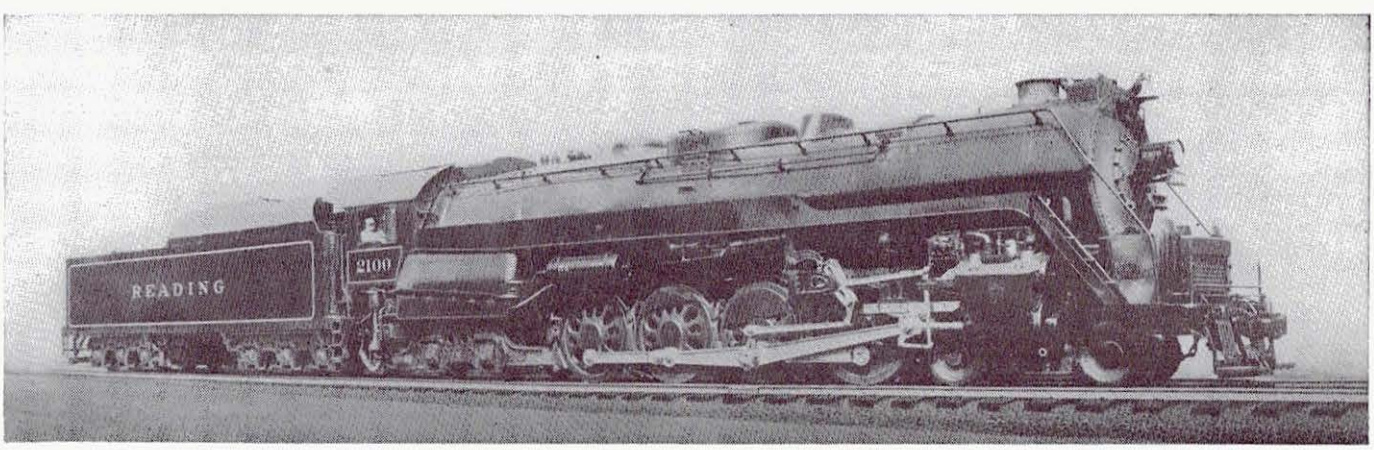
One of the 26-ton, 19,000-gallon tenders approaching completion

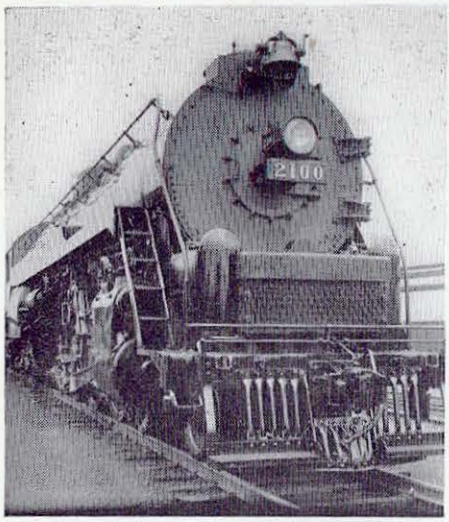
Reading 4-8-4, Class T-1 Locomotives

Thirty units, built in the company shops at Reading, Pa., are designed for fast freight service, have a tractive force of 68,000 lb. and weigh 441,300 lb.

THE Reading now has under construction in its locomotive shops at Reading, Pa., 10 locomotives of the 4-8-4 type. These locomotives are identical with 20 which were started in 1945. They are known on the railroad as Class T-1 and are for use in fast-freight service. The engines develop a tractive force of 68,000 lb. and, with the booster, a total tractive force of 79,100 lb. The driving wheels are 70 in. in diameter.

Of the first 20 locomotives, the driving axles of 19 had crown-bearing driving boxes and one locomotive was equipped with Timken roller bearings. Of the 10 locomotives now under construction, nine are being equipped with Timken roller bearings on the driving axles and one with crown-bearing journal boxes fitted with Hennessy lubricators. The driving wheels are of the Boxpok type fitted with 70-in. tires and mounted on carbon-steel axles. The General Steel Castings Corporation's four-wheel engine truck is of the rocker type construction and is equipped with 36-inch wheels. The engine truck journals have roller bearing journals. The trailer trucks are the Commonwealth four-wheel Delta type with 44-in. wheels and roller bearings. The Franklin locomotive booster is applied to the rear trailer truck axle.





General Dimensions and Weights of the Reading 4-8-4 Type Locomotive

Railroad	Reading
Builder	Company shops
Type of locomotive	4-8-4
Road class	T-1
Road numbers	2100-2129
Service	Fast freight
Rated tractive force, engine, 85 per cent, lb.	68,000
Rated tractive force with booster, lb.	79,100
Weights in working order, lb.:	
On drivers	278,200
On front truck	67,000
On trailing truck	96,100
Total engine	441,300
Tender (fully loaded)	367,700
Wheelbases, ft.-in.:	
Driving	19—3
Engine, total	45—10
Engine and tender, total	96— 6½
Driving wheels, diameter outside tires, in.	70
Cylinders, number, diameter and stroke, in.	(2) 27 × 32
Valve gear, type	Walschaerts
Valves, piston type, size, in.	13
Maximum travel, in.	7½
Boiler:	
Steam pressure, lb. per sq. in.	240
Diameter, first ring, inside, in.	86⅛
Firebox length, in.	126⅜
Firebox width, in.	108¼
Combustion chamber length, in.	45½
Syphons, number	4
Tubes, number and diameter, in.	(291) 2
Flues, number and diameter, in.	(50) 5⅜
Length over tube sheets, Ft.-in.	20— 0
Fuel	Bituminous and anthracite
Stoker	Standard HT
Grate area, sq. ft.	94.5
Heating surfaces, sq. ft.:	
Firebox and combustion chamber	327
Arch tubes and Syphons	138
Firebox, total	465
Tubes and flues	4,455
Evaporative, total	4,920
Superheating (Type A)	1,214
Combined evap. and superheat.	6,134
Feedwater heater	Worthington 5½ SA
Tender:	
Style	Rectangular
Water capacity, U. S. gal.	19,000
Fuel capacity, tons	26
Trucks	Six-wheel

The foundation of these locomotives is a General Steel Castings Corporation's cast-steel bed with the cylinders and pump brackets cast integral. The cylinders are 27 in. by 32 in. fitted with cast-iron cylinder bushings. The 13-in. valves are the piston type with 7½-in. travel, actuated by a Walschaerts valve gear which is controlled by a Ragonnet, Type B, 10-in. power reverse gear. The crossheads are the multiple-bearing type and the main and side rods are forged of carbon steel with floating bushing at the main crank pins. The main wheels are cross balanced.

Mechanical lubricators are used to feed oil to a number of points on the running gear. An Edna Model A, 30-pint, 8-feed lubricator, on the right side, supplies oil to cylinders, valves, stoker, booster, flange oilers and guides. A King, Model 31, 24-pint, 8-feed lubricator on the left side, supplies the engine-truck center plate and pedestals, driving-box pedestals, trailer pedestals, and trailer-truck radius-bar seat. King Model 36 lubricators are used on the two air compressors and the feedwater hot pump is equipped with a Nathan Type LBW lubricator.

The boiler on these locomotives is the conical type having a firebox with 465 sq. ft. of heating surface. The firebox has a grate area of 94.5 sq. ft. and is fitted with a Security brick arch supported on three Syphons and two arch tubes. An additional Syphon is located in the combustion chamber, which extends into the boiler barrel 45½ in. A complete installation of Flannery flexible staybolts is included in the firebox, located in the sides, throat, back head and combustion chamber. The crown stays are of the riveted type.

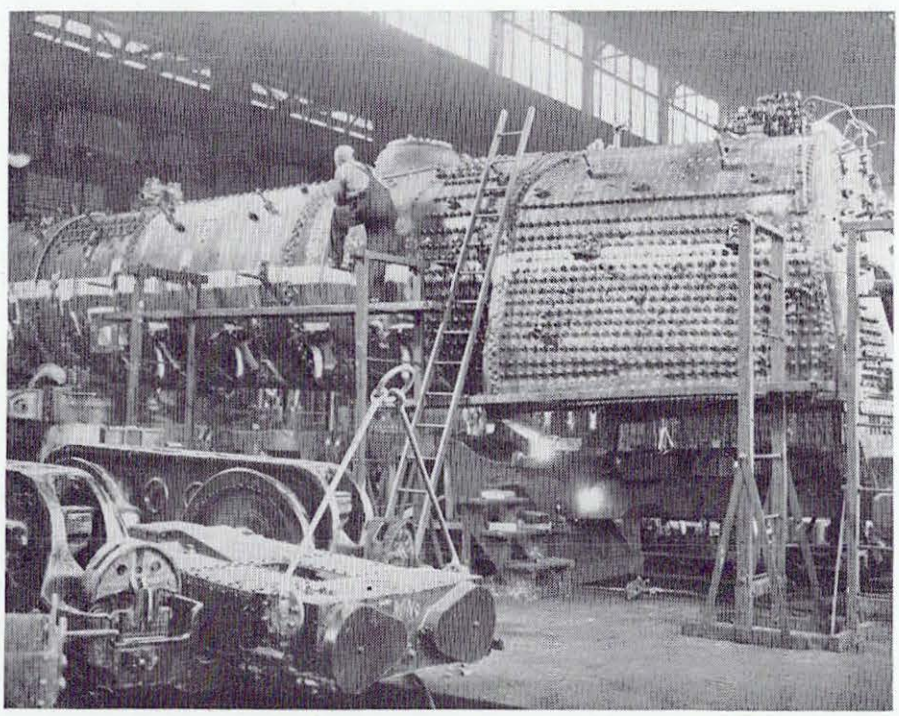
The boiler barrel is built in three rings, each having 15/16-in. sheets. The second ring is conical and the dome is located in the third ring. The firebox roof and side sheet, in one piece, is 9/16-in. thick and the firebox sheets, crown, side and combustion chamber are ⅜ in. The front and back tube sheets are ⅝ in.

The firebox length is 126⅜ in. and the width 108¼-in. These boilers are designed to burn a mixture of 10 per cent anthracite and 90 per cent bituminous coal.

The boilers are equipped with the Elesco Type A superheater having a superheating surface of 1,214 sq. ft. Water is fed by a Worthington Type 5½ SA open-type feedwater heater having an hourly capacity of 10,000 gallons. Additional feeding capacity is furnished by an Ohio, Type T-60 injector having a capacity of 9,000 gallons per hour.

The locomotive and tender brake equipment is Westinghouse No. 8ET and the air compressors, two in number, are the Westinghouse 8½-in. cross-compound type located at the front end of the locomotive on brackets cast as a part of the engine bed.

The tender is the rectangular type with General Steel Castings Corporation's cast-steel water-bottom frame. The tender tank has a capacity of 19,000 gallons of water and 26 tons of coal. The tender is carried on two General Steel Castings' six-wheel trucks and has a total wheel base of 37 ft. 8½ in. The tender-truck axle journals are all of the roller bearing type, 10 of the tenders being equipped with Timken bearings and the remaining 20 tenders with SKF bearings.



One of the T-1 locomotives under construction in the erecting shop—The firebox has a complete flexible staybolt installation

The Railroad Record in World War II

As about the last railroads left in private operation, U. S. railroads need to exert themselves to assure retention of their status—Recruiting able young men will help

By ***WILLIAM J. CUNNINGHAM***

James J. Hill Professor of Transportation
Harvard Graduate School of Business Administration

THE character and value of the railroad contribution to military achievement in World War II may be appraised in significant and easily understood terms if we make a comparison of the railroad record of 1942 to 1945 with that of World War I. In approaching such a comparison we must first take note of the fact that during the greater part of the period in which we were active participants in World War I the railroads were operated by the government, whereas throughout the entire period of World War II the railroads were operated as private corporations. In other words, government operation, found to be expedient in December, 1917, was not found necessary and was never seriously considered during the second war.

In most of the countries of the world the railroads as a whole or in large part are operated as a branch of the government. The only important exceptions to the rule are the United States and Great Britain. When World War I began in August, 1914, one of the first acts of the British government was to take over the railroads for the period of the emergency. Inasmuch as the United States did not become an active participant in the war until three years later, our railroad managers had time to plan the action which they would take if and when we joined the Allies. These managers believed that governmental operation, as in England, would be both unnecessary and unwise in the United States and they wished to demonstrate that the American railroads under private management could rise to the emergency.

Five days after our declaration of war against Germany in April, 1917, the Railroad War Board was created by the railroads and it was clothed with plenary powers by the directors of all of the individual railroads to operate the entire railroad network as a single unified system. They agreed among themselves that during the war emergency they would merge all their merely individual and competitive activities in the effort to produce the maximum of transportation efficiency.

During the first six months the voluntary unification operated with success but early in the winter a freight car congestion developed, with hampering effect upon military activities. The several reasons for the breakdown in freight service need not be recounted, but the fact that most of these causes were beyond railroad control should be mentioned. The situation in December, 1917, became so serious that President Wilson, exercising his wartime powers, took over the railroads as of January 1, 1918, for operation by a Director General of Railroads, responsible only to the President. The result was an early relief from congestion and the military needs were met thereafter with reasonable adequacy.

Under the terms of the Federal Control Act of February, 1918, the Director General took all of the railway operating revenues, assumed all of the operating and maintenance costs, and paid to each railroad company a rental equal to its average annual net railway operating income during the three years immediately preceding the war period. Substantial wage increases were granted, and freight and passenger rates were advanced 25 per cent and 20 per cent, respectively. During 1918, when war was in progress and traffic was heavier than ever before, the net earnings were about 28 per cent short of meeting the rentals, but in the post-war year 1919, and the first two months of 1920, while government operation was continued, the deficits were alarmingly large. For the two years and two months of federal operation of railroads the total deficit was about $1,690,000,000, or $2,000,000 per day.

We turn now to the situation in 1940 and 1941 prior to the Pearl Harbor attack. Throughout the greater part of that period it was apparent that our ultimate entry into the world conflict was almost certain. The plans for action to be taken when that would occur may have included government operation of railroads as in World War I, but President Roosevelt apparently decided to let the railroads alone and watch the results. Those results were so favorable that no further thought appears to have been given to government operation. The railroads met all military demands and, up to V-J day, came through with flying colors.

The only blemish on the record was the delay two months ago in moving returning veterans from Pacific ports to separation centers in the central, southern and eastern states, but that was due almost entirely to an underestimate by military authorities of the number of men to be moved at one time and the delay, caused by labor troubles, in delivery of new troop sleepers which were promised by the builders in time to meet the peak load before the Christmas holidays.

The railroad performance throughout the war period brought high praise from the military heads as well as from other governmental officials. For example, the Secretary of War paid this tribute in a letter, dated October 18, 1945, to the President of the Association of American Railroads:

> "The transportation requirements of this war have been tremendous. The part played by the railroads of America in meeting these requirements has been so outstanding and of such a high degree of efficiency that it reflects great credit on railroad transportation generally and upon the officers and employees of the individual railroads which make up the whole. The job has been well done."

The nature and extent of the railroad performance may be indicated by a comparison of certain items in the record of 1944 with the same items in 1918, two years in which military activities in the two world wars were at their peaks.

Between the two war periods there had been fundamental changes in the

This article is, in substance, the commencement address delivered by Dr. Cunningham at Clarkson College, Potsdam, N. Y., on February 24 (as briefly noted in the *Railway Age* of March 2, page 471).

national transportation pattern. The development of the motor truck and the bus, the universal use of the automobile for trips previously made by rail, the renaissance in inland waterways, the extension of pipe lines, and the spectacular growth in air transportation, had taken from the railroads their former virtual monopoly of inland transportation. The railroad loss was greatest in passenger service. Measured in passengers carried one mile, the decrease was nearly one-third between 1916 and 1940, both pre-war years. During that period the railroads just about held even in freight ton-miles, whereas prior to 1916 the annual growth had been an increase of about 12.5 per cent.

Because of this shrinkage in the volume of traffic and because technological progress had resulted in the production of more units of traffic per unit of equipment, the numbers of locomotives and cars had progressively declined, and the number of employees was reduced. Yet, in transportation units, the freight ton-miles were increased from 405 billion to 737 billion, and the number of passenger-miles rose from 43 billion to 96 billion. In brief, the railroads in 1944, compared with 1918, had 32 per cent less locomotives, 24 per cent less freight cars, 30 per cent less passenger cars, and 23 per cent less employees, yet they produced 124 per cent more passenger-miles and 82 per cent more ton-miles, without congestion, serious car shortage, or unreasonable delay.

Striking Contrast in Costs

The most striking contrast is in the cost to the government. The fact that the government incurred a deficit of more than $2,000,000 a day during the period of governmental railroad operation in World War I has been mentioned. In contrast, the government in 1944 incurred no financial obligation for railroads, and collected over $4,000,000 per day in federal income taxes. The federal income taxes paid by railroads in 1918 was $52 million; in 1944 it was $1½ billion.

The credit for this remarkable achievement should go in greater part to railroad management. It was the result of intelligent and thoroughgoing planning in pre-war days and notable progress in the technique of operation. That achievement, however, would not have been possible without effective cooperation from shippers, governmental agencies, and the traveling public. From shippers the cooperation was in minimizing freight car needs by reducing the time required for loading and unloading, and by increasing the load per car. Through the Regional Shippers Advisory Boards there was free and helpful interchange of suggestion and advance notice of car requirements. Complete and cordial liaison with the Quartermaster General's organization and the Navy's Bureau of Supply and Accounts brought about an effective and continuous understanding of military transportation needs. Continuing contacts with the Office of Defense Transportation and the Interstate Commerce Commission brought help from those governmental bodies when help was needed.

On the part of the traveling public there was patriotic acceptance of curtailment of service, especially in sleeping cars, and little complaint about crowded and late trains. From the lessons learned during the first world war the railroads arranged to do better by avoiding earlier mistakes and, through an organization created in the early twenties, in which the Army and Navy were represented, plans were made and periodically reviewed so that in the event of another war the military needs would be known and the railroads prepared to meet them. The smoothness with which the sudden transportaion demands were met in the hectic days following the attack on Pearl Harbor indicates the thoroughness and efficacy of earlier planning. The railroads were determined to be ready and to show that under private management, without the intervention of government operation as in 1918, they could meet the needs of the situation and remove the stigma of their relatively poor performance in 1917.

The favorable war-time record of railroads has an important bearing on the much debated subject of government ownership of railroads. As long as I can remember there have been ardent advocates of such a step. It was an important political issue in 1919 when Congress struggled with the problem many months before finally deciding that the railroads, after 26 months of federal operation, should be restored to private management. The proponents of nationalization exerted themselves in their efforts to convince Congress that nationalization was highly desirable, but the idea had so little public support that it was rejected. One reason for the negative attitude of the public was dissatisfaction with the results of federal operation 1918 to 1920.

That experience, however, was not an adequate indication of what might be expected from government ownership of railroads as a long-time policy. The period of federal operation was divided into two parts in which the results were distinctly different. The results in 1918 were favorable; in 1919 they were unfavorable. They were favorable in 1918 because at that time we were actively engaged in war, every influence of patriotism supported the Director General, and the organization was kept at concert pitch by the critical military needs. The unfavorable results in 1919 may be attributed in greater part to the pronounced reaction from war-time regimentation, to the substantial decline in traffic, to labor troubles, and to the disintegration of the operating organization in a too prolonged closing period.

Moreover, it must be remembered that, aside from the Director General and some of his immediate staff, the organization was composed of the same men who had operated the railroads before the government took over and presumably would operate them when government operation ceased. From the viewpoint of the advocates of nationalization the things that were good were the results of government operation, and the things that were poor were chargeable to the shortcomings of men trained under conditions of private management. On the other hand, the opponents of nationalization credited the good to the fact that the actual operation in 1918 was left almost entirely to railroad-trained officers, while in 1919 the unsatisfactory record was the result of political interference in the post-war period when such activities were not restrained, as they were in 1918, by war-time stress of patriotism. It is clear, therefore, that the short experience, under abnormal conditions, was not one from which any sound conclusions can be drawn, either for or against nationalization of railroads.

Emergency Proved Worth

The experience of 1942, however, when the railroads under private management did such a remarkably good job in meeting the stupendous and exacting requirements of military transportation with the minimum of hardship on civilian shippers and travelers is a strong argument in favor of continuing the railroads as a free enterprise. The severest test of an organization is its ability to function effectively under the stress of an emergency. In this case the railroads met that test.

The recent overthrow of the Conservative government in England and its replacement by a government definitely committed to nationalization of railroads may mean the end of private ownership and operation of railroads in Great Britain. If that occurs, the United States will be the only large nation with railroads under private ownership and operation. Such action by the people of Great Britain may have repercussions here and cause a revival of earlier efforts to remove our railroads from the realm of free enterprise. In my opinion that would be a mistake of great magnitude and my hope is that the probable renewal of efforts to bring that about will be effectively resisted.

This discussion of war-time transportation achievement has been limited solely to railroads, which during the war moved 90 per cent of the military

freight, and 98 per cent of organized groups of military personnel. If time permitted I could pay tribtue also to the notable contribution of other forms of transportation. All of them deserve high praise. The trucks and buses, although handicapped by gasoline and tire restrictions, contributed substantially to the military effort in short-haul movement; the waterways assisted materially in the transportation of bulk freight; the pipe lines performed a vital function; and the air lines, depleted as they were by the requisition of so many of their planes for military service, did a magnificent job.

These references to the several forms of transportation may suggest that something should be said about the likely pattern of transportation in the early future, and I may make at least a few broad observations. I am not one of those who fear that railroads are in an obsolescent stage and that they will soon go the way of the stagecoach and the canals, but I do believe that there will be a redistribution of traffic among the several agencies more in accordance with their relative economy and fitness. In the mass movement of commodities long distances inland the railroads are economically supreme and the quality of their service is likely progressively to improve. I believe that they will continue as in the past century to carry the bulk of the nation's transportation load, but the inherent advantages of the truck in flexibility and convenience will have greater play in short-distance movement.

I look for continued and substantial increases in the volume of high-value commodities by air express, but I doubt that under present and immediately prospective costs the air lines will become important carriers of ordinary freight.

In passenger service the railroads now have it within their power to hold the mass movement of passengers to whom economy is important, if the present trend toward modernized equipment, higher speeds, and extension of conveniences and comfort is accelerated and passenger fares are reduced. The railroads, however, are likely to lose a large part of their long-distance passenger traffic to the air lines, and modern buses on improved highways will make further cuts into the railroad short-haul traffic.

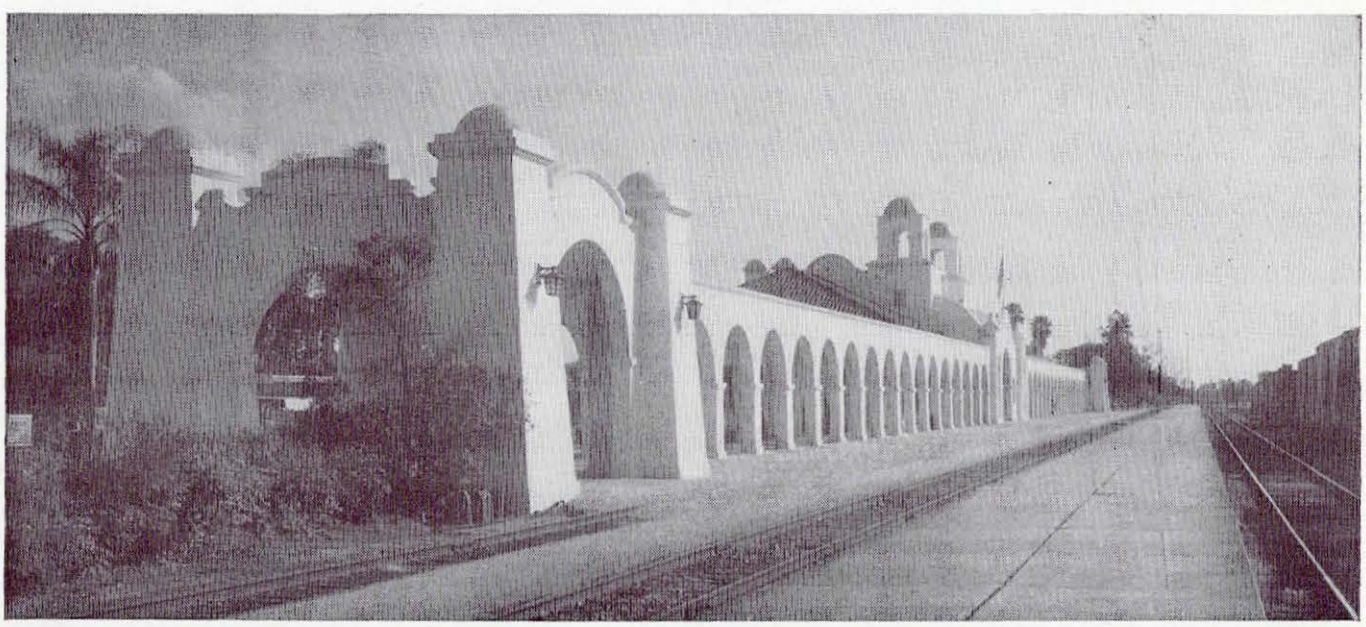
It is certain, however, that the railroads are to be confronted with competition of greater intensity than ever before and that, if that competition is to be met successfully, they will require not only new and more efficient types of motive power and rolling stock, with improved track structure and other physical facilities, but, in addition, there will be vital necessity for men of the highest type in all levels in management —men with adequate educational background, men of ability, resourcefulness, vision and courage.

I am one of those who have been critical of railroads for their apparent lack of appreciation of the value of a broad education and their failure to recruit and hold any substantial number of college-trained men except in their engineering and legal departments. Unlike many large industrial companies, whose personnel officers visit the colleges and graduate schools yearly to bid for the top-ranking graduates, the railroads, with a few notable exceptions, make no systematic effort to attract graduates into railroad service. This criticism is justified because they now more than ever before need the highest talent in their junior as well as in their senior staffs. The responsibility for that state of affairs, however, is not entirely on railroad executives. The college graduates themselves are partially responsible.

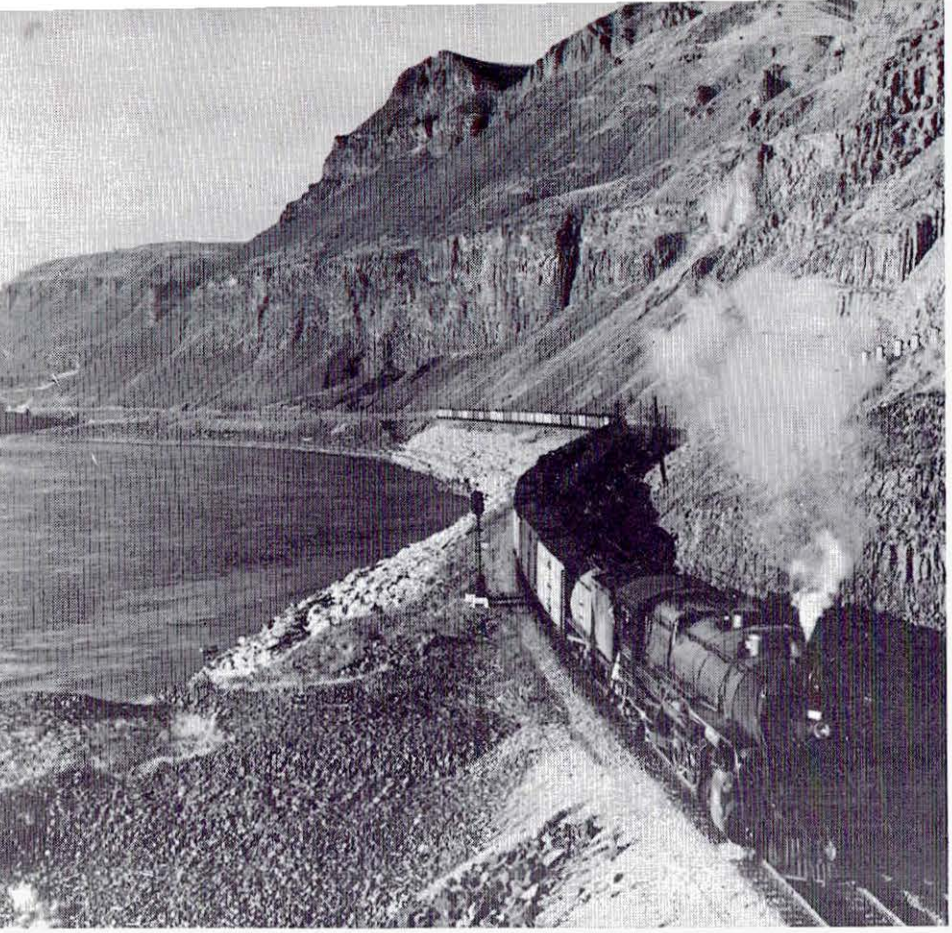
In the opinion of many railroad executives the attitude of the typical college graduate entering railroad service is that the mere possession of a college degree entitles him to preferred status. At times he displays a superiority complex. He loses patience and quits if promotion does not come quickly. Special emphasis is placed by these executives on lack of patience and stability, coupled with dislike of performance of the routine duties in the minor positions which provide the essential training for positions in higher levels.

The college graduate should continue to be a student, should err on the side of humility rather than overconfidence, should expect little consideration of the fact that he holds a college degree, and should remember that in the struggle for advancement the things that count are those that he does on the job, not the courses he took, nor the grades he earned in college. His competitor may not have had college training but, if he is ambitious and persevering, he may have acquired a close approach to the college man's educational qualifications, especially in technical fields, by attending night schools and by the study of text books, technical journals, and other sources of information. And besides he will have had three or four years of practical experience while the student was in college. Nevertheless, with patience and the benefit of his college training, the graduate need not fear healthy competition.

* * *



The Atlantic Coast Line passenger station at Orlando, Fla., which has recently been reconditioned with Colorcrete



A trainload of apples leaves Wenatchee, Wash., for eastern markets. At left is the Columbia river and the Rock Island power plant.

Great Northern's Reduced to

Finances greatly strengthened. Long-term trend of company's freight traffic and operating revenues above average. Ratio of transportation expenses to revenues also favorable

FREIGHT traffic and operating revenues of the Great Northern have registered a more favorable long-term trend than have the railroads as a whole. Based upon revenue ton-miles, as reported to the Interstate Commerce Commission, with 1925-28 equal to 100, the index of traffic for the company in the year 1940 was 28 per cent higher than the corresponding index for all class I roads. Table I herein shows the better-than-average trend of the Great Northern's railway operating revenues as compared with an index for all class I railroads.

The company is one of the most efficient roads in the country. Its favorable ratio of transportation expenses to operating revenues for each year since 1935, as compared with the class I railroads, is shown below:

Ratio of Transportation Expenses to Operating Revenues

Year	Great Northern	All Class I Railways
1945	30.4%	33.9%
1944	27.1	31.5
1943	24.8	29.7
1942	25.2	30.0
1941	27.9	33.2
1940	29.5	34.9
1939	31.1	35.5
1938	34.5	38.2
1937	32.3	36.3
1936	32.5	34.7
1935	31.8	36.3

Over the above period, expenses have been adversely affected primarily by wage increases and higher taxes. The impact of wage increases has been somewhat minimized for the Great Northern because the company's payroll is smaller than average in relation to gross revenues. For example, for the ten years 1932-41, the percentage of gross revenues taken by wages was 38.6 per cent for the Great Northern, as compared with 43.9 per cent for all class I railroads in the United States.

Traffic and Revenues

An unusually high percentage of the Great Northern's tonnage originates on its own lines; a 1939-40 figure of about 84 per cent for the company compares with an average of 65 per cent for other leading western roads. In the years before the war, the composition of the company's traffic varied for the most part in response to agricultural conditions and general business activity. Currently about 41.5 per cent of freight revenues is manufactures and miscellaneous; 25 per cent agricultural products; 10 per cent forest products; 3.6 per cent animals and products; 10 per cent iron ore; 7 per cent other products of mines; and 2.9 per cent L.C.L. freight. This compares with 1935-41 averages of 27.4 per cent manufactures and miscellaneous; 25.2 per cent agricultural products; 14.3 per cent forest

Table I—Railway Operating Revenues Compared With Class I Railroads

Year	Great Northern: Railway Operating Revenues	Great Northern: Ratio 1923-25 = 100	All Class I Railways: Ratio 1923-25 = 100
1945	$260,124,504	173.9	145.7
1944	207,657,795	180.4	154.4
1943	200,573,426	174.3	148.2
1942	165,206,031	143.6	122.2
1941	125,044,883	108.7	87.5
1940	101,743,146	88.4	70.3
1939	91,783,373	79.8	65.4
1938	79,215,531	68.8	58.3
1937	94,942,292	82.5	68.2
1936	89,625,105	77.9	66.3
1935	81,188,858	70.5	56.5
1934	70,752,877	61.5	53.5
1933	61,923,891	53.8	50.7
1932	55,549,246	48.3	51.2
1931	77,087,455	67.0	68.5
1930	104,996,076	91.2	86.4
1929	125,932,808	109.4	102.8
1928	126,737,091	110.1	100.0
1927	117,904,005	102.5	100.4
1926	117,383,909	102.0	104.4
1925	114,924,960	99.9	100.2
1924	110,243,104	95.8	96.9
1923	120,077,772	104.3	102.9

Average Interest Rate 3.4 Per Cent

products; 4.0 per cent animals and products; 15.4 per cent iron ore; 9.1 per cent other products of mines; and 4.6 per cent L.C.L. freight.

Factors Affecting Earnings

A summary of earnings of the Great Northern for the years 1935-1945, inclusive, is shown in table II. Railway operating revenues in the 1930's reflect the combined influence of a general business depression and severe drought. In recent years the company's railway operating revenues, with those of most other class I railroads, have been at abnormally high levels due to the war and it is anticipated that they will materially recede as peace-time conditions are resumed.

However, there are a number of factors permanently favorable to the railroad. Some of the principal remaining sources of lumber in the United States are the Puget Sound area, south central Oregon, and the Rocky Mountain area in Montana and Idaho, all of which are served by the company. The company and the government have cooperated in their endeavor to encourage the extension of scientific and diversified farming in the territory served by the company. Government irrigation and power projects are opening up rich new farming areas and stimulating the industrial growth of the territory.

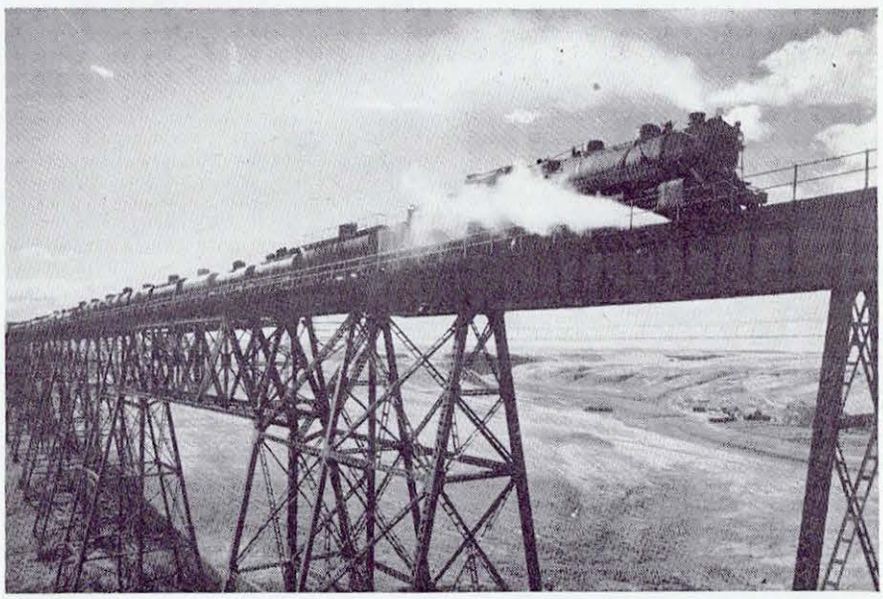
Debt Reduction Programs

The Great Northern is the only Western line which never has been in receivership. Whatever impairment of credit the railway may have suffered in 1932, 1933 and 1934, the only three years in its history that it failed to earn fixed charges, has been overcome by a concentrated effort to reduce funded debt and fixed charges, which was started before the war and expedited by wartime earnings.

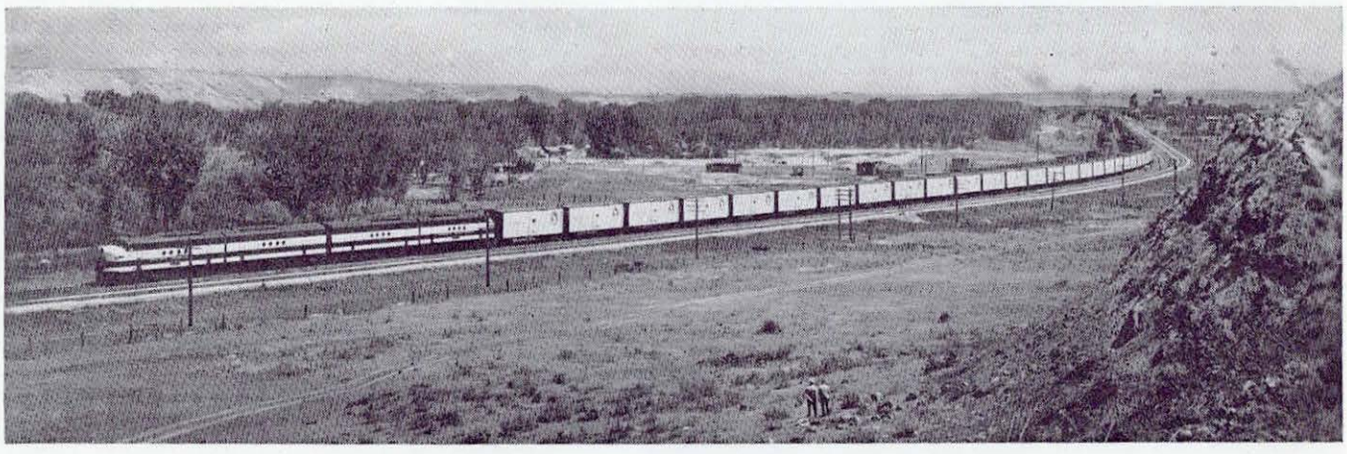
The last effort in a series of bond retirements, conversions and refundings was culminated successfully on August 28, 1945, when $75,000,000 of new first mortgage bonds, maturing in 1990 and 2000, were sold at the favorable average annual interest rate (cost to the company) of 3.18 per cent. The proceeds, plus other funds, were used to retire $50,000,000 of general mortgage 3¾ per cent bonds due 1967 and are to be used to retire $36,956,000 of general mortgage 4½ per cent bonds due 1977 on or before July 1, 1947.

With the reduced fixed charges in effect after completion of this financing, there would have been only one year, 1932, when income available for fixed charges would not have exceeded fixed charges by more than 80 per cent. At present the company has plans under consideration for the refinancing of $100,000,000 of bonds issued in 1944. This proposed refinancing would result in a further reduction in annual interest charges and there is today considerable investment regard for the company's capital stock on the expectation that a larger share of earnings henceforth will be allocated to stockholders and that the dividend rate will be increased this year.

In 1935, with a funded debt of $349,245,515 and interest thereon of $18,755,665, the average interest rate on such debt was 5.4 per cent. After completion of the August 28, 1945, refinancing, the



Oil products go to markets via Great Northern from refineries along its route. This oil train is shown near Cut Bank, Mont.



Heading for Rocky Mountain country, a Diesel-powered Great Northern freight train leaves Havre, Mont.

Table II—Summary of Earnings

Year	Railway Operating Revenues	Railway Operating Expenses	Operating Ratio	Railway Tax Accruals	Net Railway Operating Income	Total Other Income	Available for Fixed Charges	Fixed Charges	Net Income
1945.....	$200,124,504	$159,514,432	79.7	$11,347,504	$28,379,435	$6,674,691	$34,093,862	$9,936,272	$24,157,590
1944.....	207,657,795	132,595,460	63.9	40,001,258	32,968,620	5,047,063	36,316,244	12,919,278	23,396,966
1943.....	200,573,426	122,771,867	61.2	48,461,070	28,562,967	5,061,255	32,096,720	12,506,172	19,590,548
1942.....	165,206,031	93,318,476	56.5	30,727,340	39,445,076	4,592,878	42,765,017	13,710,996	29,054,021
1941.....	125,044,883	78,323,366	62.6	16,867,023	28,001,535	3,626,250	30,701,079	13,915,920	16,785,159
1940.....	101,743,146	65,901,723	64.8	12,273,206	21,807,064	3,218,139	24,420,322	14,212,128	10,208,194
1939.....	91,783,373	60,462,670	65.9	10,121,469	19,584,595	4,127,648	22,902,195	14,215,770	8,686,425
1938.....	79,215,531	54,517,108	68.8	8,364,234	14,479,276	3,574,714	16,985,924	14,273,364	2,712,560
1937.....	94,942,292	61,377,723	64.6	8,425,163	23,769,408	3,240,382	26,112,884	16,022,964	10,089,920
1936.....	89,625,105	56,880,722	63.5	7,842,526	23,559,571	5,049,169	27,671,522	17,767,536	9,903,986
1935.....	81,188,858	50,061,214	61.7	6,216,821	23,483,854	3,816,309	26,468,087	19,328,227	7,139,860

company's funded debt will have been reduced by $108,347,959, or 31 per cent; interest thereon will have been cut $10,444,000 or 56 per cent to an estimated $8,311,000 and the average interest rate reduced to 3.4 per cent. The reduction in debt and charges since 1935, adjusted to give effect to the refunding, and the number of times fixed charges were actually earned in each year since 1932, is shown in table III. This table also adjusts the figures to show the times fixed charges would have been earned, had the currently anticipated level of charges been in effect during those years.

By its debt retirement program, the Great Northern has accomplished the transition of its general mortgage from a junior position to a blanket first mortgage and eliminated all near-term maturities. The spacing of the maturities and their respective sizes at December 31, 1945, giving effect to the proposed retirement of the 4½s of 1977, is as follows:

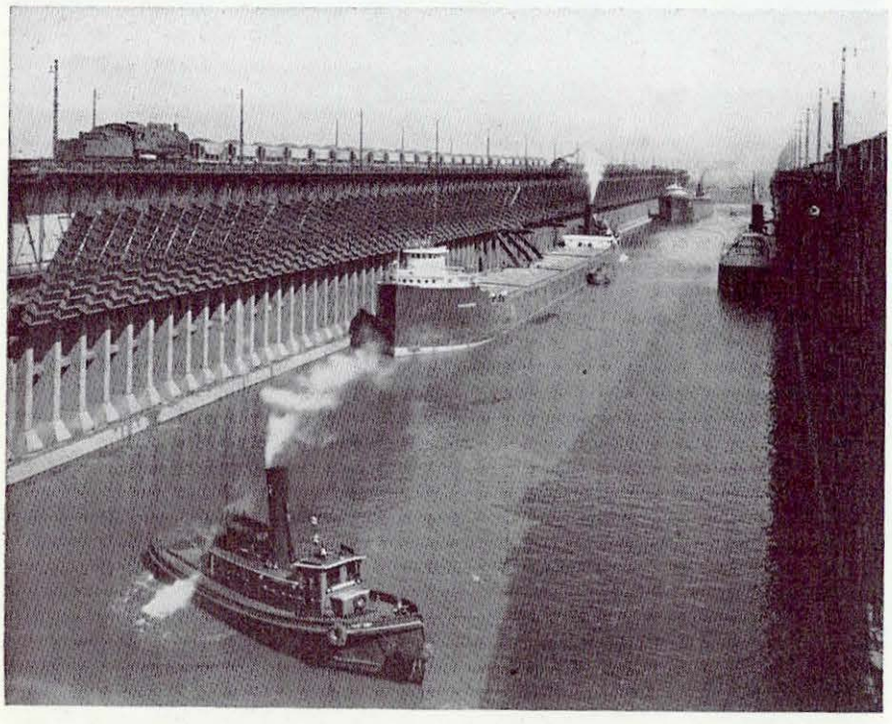
General Mortgage Bond Maturities

Series B, 5½% due 1952.....	$17,854,400
Series K, 3⅛% due 1960.....	35,000,000
Series L, 3¾% due 1970.....	30,000,000
Series C, 5% due 1973.....	14,154,900
Series D, 4½% due 1976.....	14,508,000
Series M, 3½% due 1980.....	35,000,000
Series N, 3⅛% due 1990.....	37,500,000
Series O, 3⅛% due 2000.....	37,500,000
Total to be outstanding	$221,517,300

The company has applied to the Interstate Commerce Commission for authority to issue $40,000,000 of series P general mortgage gold bonds due in 1982 and $35,000,000 of series Q bonds due in 2010. The proceeds and other funds would be used to retire on July 1 the $30,000,000 of series L bonds (callable at 105⅛); the $35,000,000 of series M bonds (callable at 105¾); and $10,000,000 of the series K bonds (callable at 105⅞). The company also indicated that it may later issue other new bonds to retire the $25,000,000 of series K bonds that would remain outstanding.

The $46,517,300 of high coupon bonds are non-callable. As will be noted, the largest of these series, $17,854,400 of 5½s, matures in a little less than six years, but the $28,662,900 of 4½s and 5s do not mature until the 1970s. In addition to $240,897,556 of funded debt and equipment obligations, the company has 3,092,543 shares of preferred capital stock outstanding, the only equity, which is carried on the books at $272,835,620 and 39½ shares of fractional scrip at $2,930, a total capitalization of $513,736,106. Surplus at the year-end amounted to $206,577,052. Funded debt now comprises only 33 per cent of combined capital and surplus. After the scheduled retirement of the 4½s, there will be about $29,500 of general mortgage bonds outstanding per mile.

As of December 31, 1945, the company was liable as guarantor by endorsement along with seven other proprietary companies (two of which are in receivership or in bankruptcy reorganization proceedings) for the payment of $14,497,000 of St. Paul Union Depot Company mortgage 3⅛ per cent bonds due 1971, and was also liable, jointly with the Northern Pacific and the Spokane, Portland & Seattle for $240.000 of Spokane, Portland & Seattle 2¾ per cent equipment trust certificates, due serially to July 1, 1947.



Iron ore moved from Minnesota mines by Great Western is transferred to Great Lakes vessels at the railway's docks near Superior, Wis.

History of Company

The history of the Great Northern goes back to the Minneapolis & Saint Cloud, which was incorporated March 1, 1856, by the territorial legislature of Minnesota. The first portion of the road was completed in 1882 and in the following year the property was sold to the Saint Paul, Minneapolis & Manitoba. On September 18, 1889, when it owned no physical property, the name of the Minneapolis & Saint Cloud was changed to the Great Northern. From February 1, 1890, the company operated under lease or otherwise the properties of certain other companies which it later acquired outright.

The railroad was built in three major stages. The first covered a considerable period of years marked by land grants and homesteading, when one small road after another was built to develop the wheat and lumber resources in Minnesota. Between April 1 and November 18, 1887, a 643-mile line was completed from Minot, N. D., to Great Falls and Helena, Mont. The road had no land grant in respect of lines west of Minnesota, and had to get the mileage into operation quickly to warrant building the extension. The following year an extension was built to Butte, Mont.,

which served the coal mines near Great Falls, the copper mining industry at Butte, and the intervening winter wheat country. Surmounting many difficult engineering problems, a route for the third major segment of the road finally was surveyed and by January, 1893, the road was extended across the Rocky Mountains via Marias Pass (adjoining Glacier National Park) and through the Cascade Range (over switchbacks until 1900, then via the original Cascade Tunnel), reaching Everett and Seattle on Puget Sound.

The Great Northern and the Northern Pacific jointly acquired control of the Chicago, Burlington & Quincy in 1901, and formed the Spokane, Portland & Seattle in 1905. The leased lines of the various wholly-owned railroad subsidiaries of Great Northern were acquired during 1907, the principal properties comprising those of the St. Paul, Minneapolis & Manitoba (about 3,877 miles) and the Eastern Railway Company of Minnesota (about 503 miles).

Table III—Reduction in Debt and Charges Since 1935

	Outstanding at December 31, 1945, (adjusted for refunding)	Outstanding at December 31, 1935	Annual Interest Charges: At December 31, 1945, (adjusted for refunding)	Annual Interest Charges: Year 1935
Mortgage Bonds prior in lien to General Mortgage Bonds	.....	$138,633,515	.....	$6,243,991
General Mortgage Bonds	$221,517,300	206,551,000	$8,017,597	12,279,357
Equipment obligations	19,380,256	4,061,000	293,869	232,317
Total	$240,897,556	$349,245,515	$8,311,466	$18,755,665

Times Fixed Charges Earned

Year	Funded Debt December 31 (Millions)	Available for Fixed Charges (Millions)	Fixed Charges (Millions)	Times Charges Earned: Actual	Times Charges Earned: Adjusted to Reflect Anticipated Fixed Charges*
1945.....	$241	$34.1	$9.9	3.43	3.90
1944.....	267	36.3	12.9	2.81	4.20
1943.....	291	32.1	12.5	2.57	4.06
1942.....	314	42.8	13.7	3.12	4.88
1941.....	334	30.7	13.9	2.21	3.48
1940.....	332	24.4	14.2	1.72	2.76
1939.....	333	22.9	14.2	1.61	2.62
1938.....	331	17.0	14.3	1.19	1.90
1937.....	337	26.1	16.0	1.63	2.96
1936.....	346	27.7	17.8	1.56	3.14
1935.....	349	26.5	19.3	1.37	2.99
1934.....	355	18.5	19.6	.95	2.12
1933.....	351	16.3	19.5	.84	1.89
1932.....	353	6.1	19.5	.31	.73

* Allows for reduction in amount available for fixed charges—due to increased income and excess profits taxes resulting from lower fixed charges.

Territory and Mileage

The Great Northern is one of four transcontinental railroads reaching the Pacific coast in the northwest United States. The company owns 7,849 miles of road in Wisconsin, Minnesota, Iowa, North Dakota, South Dakota, Montana, Idaho, Washington, Oregon, California, and the Province of British Columbia, Canada.

The principal main lines extend from Lake Superior and the Twin Cities to Puget Sound and to Vancouver, B. C., serving wheat producing districts of the Red River Valley, North Dakota, Montana and eastern Washington around Spokane; grain and cattle country of Montana; orchard districts of the Columbia River Valley, including Wenatchee; and the lumbering and fish packing centers of Puget Sound. Other main lines serve the Mesabi Iron Range in Minnesota; Winnipeg, Manitoba, partially over lines of the Canadian National; Great Falls and Butte, Mont., and south-central Oregon and northern California forests. The line serving southern Oregon and northern California is connected with the rest of the system by long term trackage rights over the Oregon Trunk Railway, the Southern Pacific, and the Spokane, Portland & Seattle. These lines, with those of the Western Pacific south of Bieber and those of the Santa Fe south of Stockton, form a north and south through route on the Pacific Coast, and between the Northwest and California. The company operates between Seattle and Portland over the lines of the Northern Pacific and the Spokane, Portland & Seattle.

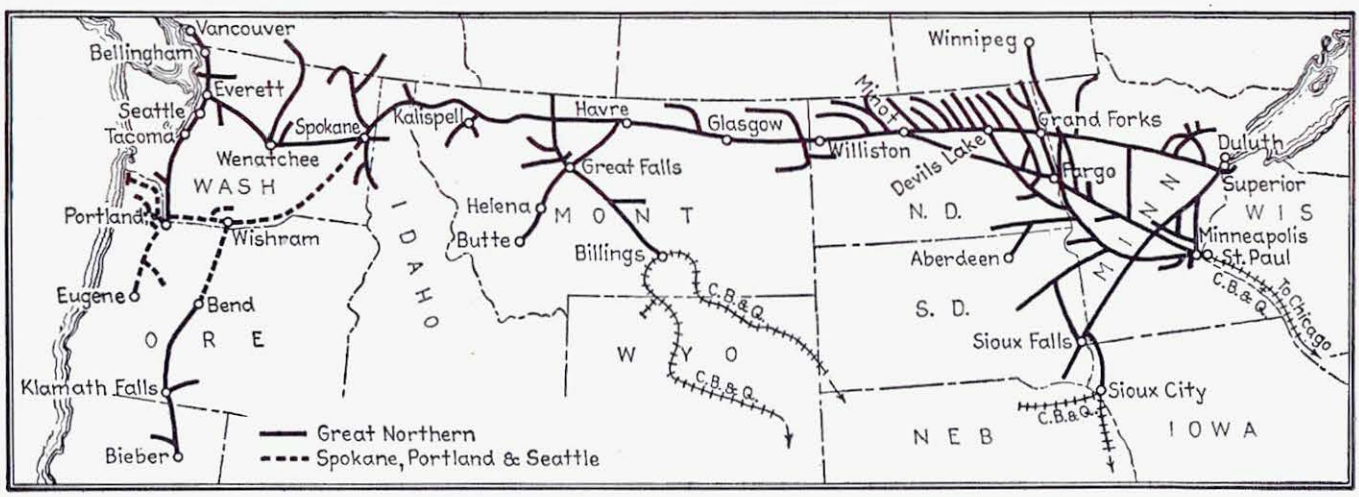
The company and the Northern Pacific each owns 830,179 common shares, or 48.59 per cent, of the Chicago, Burlington & Quincy and 50 per cent of the capital stock and 50 per cent of the bonds of the Spokane, Portland & Seattle. The Burlington operates 8,863 miles of road in Colorado, Illinois, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, South Dakota, Wisconsin, and Wyoming. It owns 12.2 per cent of the voting stock of the Gulf, Mobile & Ohio and 70.7 per cent of the voting stock of the Colorado & Southern. With the Burlington, the Great Northern operates the Empire Builder in through passenger service between Chicago and Seattle. Interchange of freight traffic is made at St. Paul-Minneapolis (Minnesota Transfer), Sioux City, Iowa, and Billings (Laurel), Mont.

The Burlington has paid dividends on its capital stock in every year since 1861. During the past ten years, the Great Northern has received payments at the rate of $4.00 per share in 1936, $2.00 per share in 1937-41, $3.00 per share in 1942-44 and $5.00 per share in 1945, which is equivalent to a ten-year average of $2.80 per share or $2,324,501 annually on its stock holdings in Burlington. The 1936 dividend of $3,320,716 was covered by reported earnings of the Burlington to the extent of only $2,505,866 but in each other year dividends were more than covered. Earnings of the Burlington available for the payment of dividends during the past ten years aggregated $141,110,231, of which only $47,834,836 or 33.9 per cent was paid out in dividends.

As a result of a debt retirement program begun in 1942, and giving effect to the refinancing completed in December, 1945, the Burlington will have reduced its total outstanding debt from $251,558,377 at the end of 1941 to $189,067,936 as of December 31, 1945, a reduction of $62,490,441 or approximately 25 per cent. The annual interest on its long-term debt as of December 31, 1945, will amount to $5,854,782, as compared with $9,564,643 for 1941, a reduction of approximately 39 per cent.

The Spokane, Portland & Seattle and its subsidiaries operate 944 miles of road in Washington and Oregon, including a line from Spokane to Portland, which affords the Great Northern its most direct access from the east to the latter city and a river-level route through the Cascade Mountains. The S. P. & S. with its subsidiaries, the Oregon Trunk Railway and the Oregon Electric Railway, is a valuable feeder for the parent lines, originating a large amount of lumber and forest products, canned fish and other manufactured products, most of the latter originating in the Portland area. They are of strategic importance to the Great Northern both for the direct access they afford to Portland from the east, and for the trackage rights which they provide between the company's transcontinental lines and its California extension.

Over the last ten years, earnings of the S. P. & S. were less than its fixed charges except in 1942-44, but as the entire funded debt (except equipment obligations) is held by the Great Northern and Northern Pacific, the disposition of income, after payment of other fixed charges, is under their joint control. During the past ten years income of the S. P. & S. available for fixed charges has aggregated $27,530,767 and fixed charges, other than interest on bonds held by the parent companies, amounted to $6,500,550, leaving $21,030,217 subject to control by the parent companies.



Practically all of the main line freight route is laid with 110- or 112-lb. rail, although approximately 130 miles of double track road has 90-lb. rail in service on one or both tracks. One hundred thirty-one-lb. rail has recently been adopted as standard for heavy traffic main line in mountainous territory. The main line is fully tie-plated and treated ties amount to 90 per cent of the ties in all tracks, including branch lines, yard and side tracks. Automatic block signals are installed on the principal main line from St. Paul to Seattle, and on some other main lines, amounting to over 3,300 track miles, including almost 600 miles on which Great Northern operates under trackage rights. Installation of signals on 330 miles of line will begin this year.

The Great Northern is in good physical condition. Expenditures for maintenance of fixed property and equipment (excluding depreciation and amortization of defense projects) during the past five years have totaled over $225,000,000, which is practically as much as similar expenditures in the previous ten years. There is little deferred maintenance.

The location, gradients, curvature, and mileage obtaining over most of the company's important routes assure it an excellent access to the available traffic and a good position in handling that traffic expeditiously and economically. To this end, special effort has been made, by reducing curvature and grades and adding larger locomotives, to eliminate double-heading, to increase train speeds and train loads, and generally to increase operating efficiency.

Early in 1929, for example, a major improvement program was completed at the Cascade Mountain crossing. Much construction, grading and equipment, as well as an entirely new 7.8 mile tunnel, went into the 73-mile stretch of electrified line from Wenatchee to Skykomish, in Washington. This permitted operating 5,250-ton freight trains. The summit elevation was reduced from 3,383 ft. to 2,881 ft. and the total curvature from 5,683 deg. to 2,009 deg.

Another noteworthy undertaking was the series of important line changes near Belton, Mont., and Scotia, Wash., begun in 1942 to eliminate and reduce curvature and improve the Rocky Mountain crossing on its west slope. These projects include heavy rock cuts and fills and 3,884 ft. of tunnels. As a result, 30 curves of from 8 to 10½ deg. have been eliminated, total curvature has been reduced 1,351 deg., and the maximum curvature on the relocated line has been reduced to 5 deg. except one 5-deg. 40-min. curve on the Belton revision. The improved line is faster track, with less wear on rails, wheels, brake shoes and equipment generally, and will be easier and cheaper to maintain.

Equipment Owned

Switching service has been facilitated and the cost reduced by the use of Diesels. The company also uses heavy Diesel power for freight traction. As of December 31, 1945, its Diesel power included 104 locomotives, with 13 additional units scheduled for delivery this year, or a total of 117 units costing $20,684,395 and consisting of 15 5,400-hp. freight locomotives, 20 2,700 to 4,050-hp. freight or passenger locomotives, three 1,500-hp. road and switching locomotives, 70 1,000-hp. switchers or combination road and switchers and nine switchers of less than 1,000 hp.

During the past twenty years (1926-1945) $256,687,239 was put into the property. The increase in depreciation reserves for these years, excluding $52,463,954 for amortization of defense projects, was $53,323,091.

As of December 31, 1945, there was $19,380,256 of equipment trust or conditional sales contracts outstanding covering equipment originally costing $49,298,084.

The company's locomotive, car and work equipment consisted of the following:

	Units Fully Owned	Units Under Equip. Trust and Cond. Sales Contracts	Total
Steam Locomotives	805	...	805
Diesel Locomotives			
Freight	7	23	30
Passenger	5	....	5
Switch	13	45	58
Yard and Road	7	4	11
Electric Locomotives	15	...	15
Gas-Electric Cars	33	....	33
Freight Cars	30,386	12,205	42,591
Passenger Cars	685	12	697
Work Equipment	2,727	...	2,727

Shops and Yard Facilities

The Great Northern has shops and facilities for the repair of freight and passenger cars, and its shops and enginehouses are adequate for maintaining its locomotives. Two large Diesel repair shops were completed in 1945. The road built 310 freight cars in its own shops in 1945 and has 323 more scheduled for 1946. Within the last six years, the company has built or purchased 7,152 50-ton box cars and 2,500 75-ton ore cars, approximately 28.8 per cent of its total ownership of this equipment, costing nearly $29,974,000.

Four complete new light-weight passenger trains, estimated to cost $4,800,000 exclusive of the Diesel locomotives, are on order for additional daily service between Chicago and Pacific northwest cities. Each of these streamliners will include a baggage-mail car, four coaches, a lunch-counter car with dormitory for the dining car crew, a diner, four sleeping cars containing duplex roomettes, bedrooms, drawing rooms and a limited number of open sections, and a lounge-observation car. The 45-hour schedule of the new train will save one night between Chicago and the Pacific Northwest and a business day on coast-to-coast journeys. Deliveries are expected during the latter half of 1946.

At the beginning of the year, the estimated cost of equipment on order was $6,149,000 and the estimated cost of the 323 box cars being built in the company's own shops was nearly $1,071,800.

GENERAL NEWS

Pullmans Will Go From Coast-to-Coast

P. R. R., N. Y. C. and B. & O. will inaugurate service with cooperating western roads

Through coast-to-coast sleeping car service will be inaugurated on March 31 by cooperating eastern and western railroads. An all room sleeping car on the New York Central's Twentieth Century Limited, leaving New York at 5:30 p.m. and arriving at La Salle St. station at 9:30 the following morning will be transferred to the Atchison, Topeka & Santa Fe's Chief, leaving Dearborn station at 12:01 p.m. The car will arrive at Los Angeles 11:50 a.m. on the second day (the third day out of New York). The eastbound Chief, leaving Los Angeles at 12:01 p.m., will carry a similar through car for transfer to the Century. Though no cut will be made in the elapsed time needed for the trip, F. H. Baird, general passenger traffic manager of the New York Central, pointed out that passengers will be able to make themselves at home in their rooms and travel undisturbed from one coast to the other. Passengers may either stay in their car during the transfer from one station to the other or spend the lay-over time in Chicago.

The N. Y. C. has discussed similar arrangements with the Burlington, Northern Pacific, Milwaukee, and the Great Northern but no schedules have been made as yet, Mr. Baird said. When asked if the New York Central-Santa Fe action had been influenced by the activities of R. R. Young, chairman of the board of the Chesapeake & Ohio, Mr. Baird replied that he had been discussing coast-to-coast passenger service with other railroads before he had heard of Mr. Young.

Also on March 31, through sleeper service will be inaugurated by the Pennsylvania, Santa Fe, Chicago & North Western, Union Pacific, and Southern Pacific. A car on the Pennsylvania's Broadway Limited, leaving New York at 6 p.m., will be switched to the Santa Fe Chief at Chicago to finish the trip to Los Angeles. A second car from the Broadway Limited will proceed to Los Angeles via the Chicago & North Western and the Union Pacific. A third car will be switched from the Broadway at Chicago and go to San Francisco via the Chicago & North Western, Union Pacific, and Southern Pacific. Cars will begin their transcontinental trip at either end of each of these three routes daily. On June 2 the Chicago, Rock Island and Pacific, and the Southern Pacific will cooperate with the Pennsylvania in establishing two-way daily service over the Golden State Route and the Pennsylvania.

Claude E. Peterson, vice-president system passenger traffic of the Southern Pacific, announced that schedules of the Overland and Golden State Limiteds will be cut to approximately 48 hours to provide through sleeper service on a basis convenient to the public. Mr. Peterson added that the Southern Pacific had been cautious about getting into transcontinental service before the war because of light traffic loads, and heavy military traffic had made it impossible to do anything about it during the war. He expects reduction of running time and adjustment of schedules, reducing lay-over time in Chicago, to clear the way for efficient coast-to-coast service.

R. B. White, president of the Baltimore & Ohio, announced that this road will also begin daily sleeping car service through Chicago in connection with the Santa Fe. on March 31.

A bedroom-roomette sleeper will run from Washington to Chicago on the B. & O. Capitol Limited, and continue to Los Angeles on the Santa Fe Chief. Another daily car will leave Los Angeles for Washington. Mr. White further stated that the B. & O. is negotiating for sleeper connections through both Chicago and St. Louis to other points in the west and southwest.

Superintendents to Meet in Chicago, June 6, 7 & 8

Plans for the fiftieth annual meeting of the American Association of Railroad Superintendents, to be held at the Stevens Hotel in Chicago on June 6, 7 and 8, 1946, are now well under way. The various committees are now working on their respective assignments, which are as follows:

Committee No. 1.—Economics of increasing the payload of trains—L. B. Kendall, asst. gen. mgr., C. & N. W., Chicago, chairman.

Committee No. 2.—Post-war possibilities of handling L. C. L. freight—K. T. Reed, supt., P. M., Grand Rapids, Mich., chairman.

Committee No. 3.—Modern practices in clearing up derailments and restoring traffic after accidents—W. A. Hurley, asst. gen. supt., N. Y., N. H. & H., New Haven, Conn., chairman.

Committee No. 4. — Meeting post-war competition in passenger service — F. B. Hank, asst. to v.-p. and gen. mgr., N. Y. C., New York, chairman.

Committee No. 5.—Utilization of handicapped employees—H. P. Dunlap, asst. to v.-p., Ry. Exp. Agency, Chicago, chairman.

Committee No. 6.—Superintendent's responsibility in meeting post-war maintenance of way problems — C. O. Hooker, supt., G. N., Superior, Wis., chairman.

Committee No. 7.—Superintendents and safety—W. C. Barrett, chief of personnel, L. V., Bethlehem, Pa., chairman.

Flow of Service Men Now Easily Handled

It should hold steady to July; most freight car types remain very scarce

While the freight car situation continued "tight" through February, the number of military personnel handled went below one million for the first time since July, 1945, resulting in an easing of requirements for coach and Pullman equipment, Chairman Warren C. Kendall of the Car Service Division of the Association of American Railroads commented in the latest issue of his monthly report on the "National Transportation Situation." As further evidence that the demand of the military services for passenger cars has passed its critical stage was the reinstatement, effective March 1, of pre-war regulations of both the Army and Navy under which each man making an overnight journey is entitled to Pullman accommodations.

There was a specially heavy demand last month for box, stock, hopper, and refrigerator cars, Mr. Kendall noted, and shipments of grain and products, coal and perishables continued at record or near-record levels. Moreover, the number of cars held by receivers in excess of free time increased "considerably" in February, he pointed out, as did the average turn-around time, which was 16.5 days, as compared to 15.8 days in the corresponding 1945 month. While these conditions were due in some measure to strikes in industry, there is an urgent need for carriers, shippers and receivers to exert the greatest possible effort along all lines if the freight car supply is to be improved and transportation efficiency maintained, he remarked.

Box Car Demands Still Heavy—Demands for high grade box cars remain heavy in all parts of the country, Mr. Kendall reported, and on the western roads there have been some deficiencies in meeting requirements. The grain movement continues to be the greatest single box car distribution problem confronting the railroads, and is likely to remain so for some time to come, he observed, thus repeating in effect what he had remarked in previous months. Loadings of grain and grain products in 1945 were the highest on record, he pointed out, although the previous high record for the first nine weeks was made in 1944. That record was almost equalled in the first nine weeks of this year. Carload receipts of grain at principal interior markets in 1945 totaled 9.95 per cent over

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Sees Many Problems Ahead for Engineers

Their solution will require full co-operation of all concerned, says Prater

Railroad engineering officers are today confronted with many problems "far reaching in scope," and if these problems are to be solved satisfactorily it will be necessary for such officers "to have close contact with and receive the full co-operation of other industries, manufacturers and the government and its many agencies." This is the opinion of B. H. Prater, chief engineer, Union Pacific, as expressed in an address before the "engineering night" meeting of the Western Railway Club at the Hotel Sherman, Chicago, on March 18. "The over-all problem today and for the future," he said, "is to preserve and improve railroad facilities for safe, prompt and dependable transportation, to preserve the economic value of rail transportation for peace-time operation, and to insure the railroads being immediately available in strong and healthy condition as one of the indispensable weapons for national defense."

First listing briefly the "present everyday problems that will continue to be future problems" of engineering officers, such as curve reduction, the strengthening of tracks and bridges and the modernizaton of steam power plants, Mr. Prater went on to discuss several subjects "of more than passing interest." Predicting that the separation of highway-railroad grade crossings and the protection of grade crossings by signal devices will take place on an active scale in the post-war years, Mr. Prater noted that the latest government policy in this respect calls for railroad participation in the expense of such structures in proportion to the direct benefits obtained by them, but not exceeding 10 per cent. The suggestion has been made, he said, that "to save time, correspondence and argument, it might be well for all the interested parties to agree in advance that the measure of benefits to the railroad will in each and every case be, say, 5 per cent, which is an average between the conditions of little or no benefit and the maximum of 10 per cent."

Relocations for Waterways—Noting that army engineers are actively engaged in planning river developments for flood control and other purposes, which will involve expenditures of millions of dollars, Mr. Prater pointed out that, in connection with such projects, some railroad lines will have to be relocated and many will have to be raised out of the resulting higher flood plains. "As these projects get under way," he said, "there will be additional demands on the railroad engineers to meet the proposed conditions, and vigilance will be required on the part of the railroads to see that the money required for such changes is provided without direct expense to them."

Another set of problems that Mr. Prater considers of particular interest are those rising out of the insistence of the United States Public Health Service that many improvements and modifications be made in existing facilities for watering passenger cars, these changes being made necessary as the result of recent revisions in the code prescribing the types of facilities required for performing this function. After referring briefly to the provisions of the revised code, Mr. Prater said that "the cost of working out these details runs into large figures at many locations and the problems of design to meet the requirements satisfactorily are demanding considerable time and study by our engineering departments." In addition, he said, the railroads are confronted at many places with additional expense in connection with "stringent requirements" in the code governing the handling of garbage from dining cars and soil cans used under set-out passenger cars.

In a discussion of the problem of adequate clearances, which he said has been of particular interest in recent years because of war-time conditions, Mr. Prater brought up the question of extra-length freight cars, saying that the matter of lengthening such cars to as much as 70 or 80 ft. has been under investigation. Pointing out that such an increase in length would present clearance problems on curved track, he said that the serious problem would be encountered in making delivery of such cars at destinations "where many industries are served with trackage of high-degree curvature and where they have buildings and platforms already constructed to the minimum permissible clearances for present equipment."

C. T. C. and Signals—After referring to the advantages of centralized traffic control Mr. Prater said "it is important to keep in mind that in some locations present automatic block signals must be remodeled to afford the proper braking distances needed in view of increased weights and speeds of trains. In a given territory where this remodeling is required and other conditions are favorable, it may be well to consider centralized traffic control installations before spending large sums of money to change the block signals."

Mr. Prater commented at considerable length on the problem of attracting young engineers into railroad service. Noting that many engineering schools "have not offered courses attractive to students who might wish to specialize in studies for railroad work," he said that the railroads themselves are judged by many engineering schools as being responsible for this situation. In any event, he said, the "backbone of engineering is education," which "can be acquired in two ways; at an engineering college, or while at work on the job." One difficulty confronting the young college-trained engineer, he said, is that when he completes his course he generally must accept a position subordinate to a man of his own age who went to work instead of attending an engineering school, with the result that he is three or four years ahead of the college graduate in practical experience. As a consequence, said Mr. Prater, "the college man may easily acquire the complex that had he started practical work instead of attending college he would be just four years further along the road to a position of greater responsibility."

Rail Capital Outlays Are Acts of Faith

Imply belief that the national transport policy will be implemented, says Metzman

In proceeding to invest "millions upon millions of dollars" to turn their blueprints into "finer equipment, and finer transportation teams," railroad executives are "acting on faith" that "the common sense and innate fairness of the American people will, in turn, convert the transportation policy blueprinted by the Act of 1940 into an effective program enabling our private investment to work soundly alongside of the vast investments of tax money in other forms of transportation." So said Gustav Metzman, president of the New York Central, in an address prepared for delivery at the March 21 meeting of the Pacific Coast Transportation Advisory Board in Los Angeles, Cal.

The N. Y. C. president asked the assembled shippers for assistance in marshalling public opinion behind a program whereby the national transportation policy would be "thoroughly implemented and turned into constructive action." Railroad blueprints and government blueprints, he asserted "must be worked into a living, unified national policy that will give America the complete, well-rounded and continuously progressive transportation facilities needed to maintain world industrial leadership."

The Declaration—Leading up to this call for action, Mr. Metzman outlined the 1940 Act's declaration providing for "fair and impartial regulation of all modes of transportation, so administered as to preserve the inherent advantages of each; to promote safe, adequate, economical and efficient service and foster sound economic conditions in transportation and among the several carriers—all to the end of developing,, coordinating and preserving a national transportation system by water, highway and rail as well as other means, adequate to meet the needs of the commerce of the United States, of the postal service and of the national defense."

"This is a good blueprint," Mr. Metzman continued. "But the trouble is, that in many respects our national transportation policy is only a blueprint. In the field of carrier regulation it has not been adequately implemented because the line of demarcation between the Interstate Commerce Act on the one hand, and the anti-trust laws, on the other hand, has never been adequately defined. The railroad anti-trust suit now pending at Lincoln, Neb., is in substance an attack by the Department of Justice upon the Interstate Commerce Commission—an effort by the former to undermine the system of rate regulation which Congress first wrote into law in 1887.

"The Bulwinkle bill, H.R. 2536, which has the practically unanimous support of the country's users of transportation, draws a workable and practicable line of demarcation. The Bulwinkle bill has passed the

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Wage and Rules Case Hearings Under Way

B. of R. T.-B. of L. E. proceeding opens before the emergency board

Emergency board proceedings, in which the Brotherhood of Locomotive Engineers and the Brotherhood of Railroad Trainmen are seeking a wage increase of 25 per cent, with a minimum money increase of $2.50 on the basic day, and 45 changes in working rules, were commenced in Chicago on March 12. These organizations also represent certain yardmasters and dining car stewards for whom they are seeking similar rule and pay revisions.

The emergency board is composed of Leif Erickson, Helena, Mont., chairman; Dean Gordon S. Watkins, University of California; and Frank M. Swacker, New York City.

Representatives of Parties—Representing the employees are A. Johnston, grand chief engineer, Brotherhood of Locomotive Engineers and A. F. Whitney, president, Brotherhood of Railroad Trainmen, while the carriers are represented by H. A. Enochs, chairman, Executive Committee, Bureau of Information, Eastern Railways, D. P. Loomis, executive director, Association of Western Railways, and J. P. Parrish, vice-president, Chesapeake & Ohio. In the wage case counsel for carriers are headed by William T. Faricy, vice-president and general counsel, Chicago & North Western, and in the rules case by Howard Neitzert, Chicago, while Ray T. Miller, Cleveland, Ohio, is acting as attorney for the organizations in both cases.

Prior to the presentation of testimony, Frederick E. Stout, representing the Chicago, North Shore & Milwaukee; Ben Copple, attorney for the trustees, Chicago, Aurora & Elgin; and Richard J. Lally, on behalf of the Central of New Jersey, appeared before the board asking that their respective roads be dismissed from these proceedings; but should the board see fit to refuse, they requested that they be given an opportunity at some proper place in the hearings to present their individual cases.

Extension of Time Discussed—Chairman Erickson advised that in accordance with the executive order of March 8, creating this emergency board, a report was to be submitted to the president in 30 days, or by April 10. He inquired of the representatives of the employees and the carriers if they would be willing to grant additional time, should it become necessary for the completion of this report, but after some discussion suggested that the matter be postponed until a later date to permit all parties concerned a chance to see how the proceedings were progressing before reaching a final decision.

According to Mr. Miller, engineers, trainmen and yardmen have been meagerly treated in pay raises and betterment of working conditions during the past 30 years. He also claimed that the total increase in pay since 1927 amounts to only $1.92 per day or 24 cents per hour, while the employees of every other industry have been increased to such an extent that the railroad earner has been placed at a lower basis to maintain his living standards and his position in society. Mr. Miller also claimed that approximately six million workers had received wage increases since August 18, 1945, and that these increases tended to make the railroad worker still further behind in wages with which to meet the increasing living cost.

Act Called Barricade — Mr. Miller stated that the Railway Labor Act barricades railroad employees, as it generally takes a year before their demands can be heard, while on the other hand, the employees in every other craft or employment can abruptly make demands, strike and obtain redress. He also maintained that this act has retarded the railroad employees' pay scale, while industrial employees have reaped full benefits of increased wages. Mr. Miller quoted President Truman in his message to Congress on the State of the Union, January 21, 1946, as follows: "Good wages mean good markets; good business means more jobs and better wages."

Mr. Miller outlined the following rules changes that are requested by the employees:

Rule 2—Standardization of wage rates between the territories. This item is submitted on behalf of the trainmen and to some extent the engineers; its purpose is to make wage rates uniform in the Eastern, Southeastern and Western territories.

Rule 3 would establish a basic day for trainmen in passenger service of 100 miles or less (straightaway or turnaround), five hours or less, except as provided in the short turnaround passenger rule.

Rule 4—Passenger Service—overtime. On short turnaround runs, no single trip of which exceeds 80 mi., including suburban and branch lines service, overtime shall be paid for all time actually on duty, or held for duty, in excess of 6 hr. (computed on each run from the time required to report for duty to the end of that run) within eight consecutive hours; and also for all times in excess of eight consecutive hours computed continuously from the time first required to report to the final release at the initial terminal. This proposal also embraces certain minor changes in the existing rule. One of these provides that the final release shall be at the initial terminal.

Rule 5 would require that engineers or motormen operating motor or electric cars in multiple unit passenger service shall receive payment based upon the minimum rate for operating one unit and shall receive the rate stipulated for the next higher rate specified in the next higher bracket in rates provided in rate schedule for each additional unit operated.

Rule 6 would require that all overtime in passenger service shall be paid on the minute basis at a rate of time and one-half of the basic hourly rate.

Rule 7 stipulates that a regular assigned or extra man in yard service be paid on the minute basis at one and one-half times the hourly rate for all time worked in excess of eight hr. in a 24-hr. period and that a regular or extra man used on a second tour of duty in a 24-hr. period shall be paid time and one-half for the second tour of duty. This proposal relates to overtime in yard service and applies equally to enginemen and trainmen.

Rule 8 establishes a minimum daily earning for road and yard service engineers. This proposal would remove all gradations below 250,000 lb. on drivers and provides that the basic rates for locomotives weighing 250,000 lb. on drivers shall become the minimum. This would also apply to hostlers and hostler helpers as their rate would be the local freight rates applicable to firemen for locomotives of 250,000 lb. on drivers.

Rule 9 would elevate yard switchtenders' pay to that of a yard brakeman (helper).

Rule 10 would assure a minimum day for engineers in all classes of assigned service for each day not used.

Rule 11. Minimum guarantee—regular and extra service trainman. Trainmen in freight service shall be guaranteed the full mileage or hours of their assignment, inclusive of any overtime made that is part of the assignment, for each day not used. Trainmen in unassigned through freight service (inclusive of unassigned work train

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Roads Continue Case Before Wage Boards

Arbitrators sitting in joint session hear more carrier witnesses

Presentation of testimony in behalf of the carriers in the wage cases of the three operating brotherhoods and the 15 non-operating unions continued before the two arbitration boards in joint sessions subsequent to those reported in last week's issue. The hearings are being held at Chicago.

Early in the March 12 session the cross-examination of E. B. Perry, manager of personnel, New York, New Haven & Hartford was completed. He was followed by J. Elmer Monroe, assistant director of the Bureau of Railway Economics, Association of American Railroads.

Non-Op Average Wages—Mr. Monroe began his testimony with the presentation of an exhibit entitled "Wage case—1946, non-operating railway employees", which presented pertinent data taken or calculated from statistics of the Interstate Commerce Commission, in support of the carriers' position in the case. During the last six months of 1921, the first period for which such an average could be computed, the average wage rate of the non-operating group of employees was 53.4 cents per hour. The average rose to 55.6 cents an hour in 1929, 63 cents hourly in 1940, and 82.3 cents an hour during the first seven months of 1945, which latter rate is 48 per cent greater than in 1929 and 30.6 per cent larger than it was in 1940. Total hourly earnings, including overtime, Mr. Monroe said, were 86.9 cents during the first seven months of 1945, or 4.6 cents greater than straight-time hourly earnings.

Mr. Monroe's exhibit included statements of average weekly earnings for each of the classes of non-operating employees, segregated first by general groups and then by individual job classifications. A summary of the average weekly wage rates and earnings for the larger groups of these employees for the first seven months of 1945 follows:

Group	Average straight-time Hourly Wage (In cents per hour)	Average Weekly Compensation (In dollars)
Clerical and Station	86	45.73
Maintenance of Way	68.2	37.79
Shop-Crafts	95.3	54.98
Signalmen	100.3	53.23
Telegraph	95.8	51.58
Marine	94.5	55.23
Dining Car	95.1	35.68

Averages for Ops—This exhibit was followed by one captioned "Wage case, 1946, train, engine and yard service employees", which, using the same methods of computation and the same source material, presented wage data in the case of the operating employees. Mr. Monroe said that the average basic daily rate of pay for the operating group of employees was $5.62 during the last six months of 1921, $6.44 in 1929, $6.91 in 1940, and $8.46 for the first seven months of 1945. Average hourly earnings, straight time, based on the number of hours actually worked, as computed from the time required to

report to the time released, or "clock" hours, according to the witness was $1.307 during the first seven months of 1945.

This figure varied from the $1.096 per straight-time hour, used by E. W. Oliver, witness for the employees, according to Mr. Monroe, because Mr. Oliver, in arriving at his average had used the straight-time hours paid for, which represents the hourly equivalent of the miles run, as the divisor, rather than the "clock" hours actually worked, the divisor used by the carriers. Using Mr. Monroe's method of calculation, straight-time hourly earnings of the operating group of employees rose from an average of 80.3 cents in the last six months of 1921, to 94.6 cents in 1929, to $1.096 cents in 1940, and to $1.307 in the first seven months of 1945.

For yard employees alone, Mr. Monroe presented the following statistics:

Year	Av. Basic Daily rate	Straight-time hourly rate of pay	Average Weekly Earnings
Last 6 mos. 1921	$5.78	$0.735	$36.28
1929	6.61	0.852	43.53
1933	...	0.768	33.01
1940	7.07	0.916	44.14
First 7 mos. 1945	8.59	1.115	61.98

Concerning road employees, he said that in 1944 the carriers paid for a total of 626,183,000 hours, of which 48,720,000 represented hours at over-time rates, 46,405,000 were due to vacation hours and constructive allowances, 406,707,000 were straight-time hours actually worked, and 124,351,000 were hours paid for in excess of hours actually worked, compensation for the latter amounting to $137,766,000 out of an aggregate compensation for road employees of $711,514,000. During the last six months of 1921, he said, a road man earned a weekly average of $42.64, compared with $50.71 in 1929, slightly less than $40 in 1933, $52.22 in 1940, and $74.19 during the first seven months of 1945.

Combined Averages—Mr. Monroe's next exhibit was a summary of the two preceding ones, in which he presented similar wage data based on combined averages of both operating and non-operating employees. He stated that in January, 1941, the hourly rate of pay for operating employees, based on "clock" hours was $1.094, while in October, 1945, it had increased by 20.7 per cent to $1.32. For non-operating employees, the hourly increase over the same period was given as 28.6 per cent, while the over-all increase in hourly rates for both classes, he stated, was 24.4 per cent during this time. Quoting federal government regulations relating to 'Cost of Living Increases", Mr. Monroe said that the recognized increase in the cost of living was 33 per cent between January 1, 1941, and September, 1945, according to a government regulation of the stabilization director, issued on December 5, 1945.

However, after making allowances for "an abnormal change in the distribution of employees", Mr. Monroe found that the average increase in straight-time hourly rates, January, 1941 to October, 1945, was 27.8 per cent for all, 31.7 per cent for the non-operating group, and 19.9 per cent for the operating group. Applying the stabilization order to these rates, he found that the maximum increase that could be granted was an average of 3.6 cents an hour for the two classes of employees combined if average earnings were to be allowed to increase 33 per cent since January, 1941, or three cents hourly if wage rates alone were to be allowed the increase.

Discussing the effects of the mileage and hours method of payment of road crews, Mr. Monroe said that in 1944 the average passenger conductor earned 159.4 per cent of his basic hourly rate within a "clock" hour, and the average through freight conductor earned 133 per cent of his basic hourly rate within a "clock" hour. For all employees in train and engine service, not including yard employees, this figure stood at 130.6 per cent of basic hourly rates, he said, adding that for each one cent increase in the basic hourly rate of pay, road crews would actually receive an increase of 1.3 cents in their hourly earnings.

Cent an Hour Costly—Completing his testimony, Mr. Monroe said that an increase of only one cent an hour to the operating employees would cost the carriers, on the basis of the service hours paid for in 1944, $10,573,000, while a similar increase granted the non-operating group would cost $29,121,000, and if given the remaining employees an additional $2,067,000 would be added to these, for a total cost of $41,771,000. On the basis of 1941 hours, such an increase of one cent an hour would amount to $30,328,000. Neither of these estimates, said Mr. Monroe, include the effects of increased payroll taxes which would accompany them.

The hearings on March 13, opened with cross-examination of Mr. Monroe, following which Daniel P. Loomis, executive director, Association of Western Railways, took the stand, presenting an exhibit comparing average hourly earnings of railway workers with those of workers in manufacturing industries. Mr. Loomis said that railway workers were much less affected by the transition from a war-time to a peace-time economy than were the workers in other industries. As an example he stated that average weekly earnings for the combined operating and non-operating groups of railway employees were $51.01 in April, 1945 and $49.39 in October, 1945, a decline of only $1.62 or 3.2 per cent since the cessation of hostilities. For manufacturing employees during the same period average weekly earnings fell $6.08 or 12.9 per cent from $47.12 in April to $41.04 in October.

In addition, he presented evidence to show that rail employment was more stable than employment in other industries so that the difference between annual earnings was even greater. According to the witness the average annual earnings of employees in all private industries, including railroads, rose from $1,408 in 1929 to $2,189 in 1944, an increase of $781. During the same period the average annual earnings of non-operating employees increased from $1,422 in 1929, to $2,361 in 1944, or $939, while the operating group gained $1,072 from $2,492 in 1929 to $3,564 in 1944. Mr. Loomis also presented data comparing railway wage rates for specific groups of employees with those paid corresponding classes of workers in other industries all tending to show that in general the railway employee was as well, or better, paid than others performing comparable tasks. Concerning loss of take-home pay, he said that an average increase of 10.3 cents an hour would maintain weekly earnings at their war-time levels.

Fact Finding in Other Industries—Mr. Loomis' final exhibit consisted of copies of the reports of "fact-finding" boards in several recent national wage cases involving other industries, by which he endeavored to prove that there was no definite national pattern for wage adjustments other than those required to meet the estimated 33 per cent increase in the cost of living and that in each of these cases, the boards had insisted on a finding based on the merits of specific cases at issue. In most, he said, the wage increases granted failed to maintain take-home pay by considerable amounts, further pointing out that cost of living adjustments are considered part of any adjustments made to "cushion" against loss of take-home pay.

The proceedings on March 14 were largely devoted to cross-examination of Mr. Loomis, following which Fred G. Gurley, president of the Atchison, Topeka & Santa Fe, began his testimony as a witness for the carriers. After giving a brief discussion of the lines of the Santa Fe, Mr. Gurley revealed that during the past five years the road had reduced its funded debt approximately $104 million, and interest charges by 34½ per cent, or $4.6 million. By way of contrast, he said, payroll taxes which are in the nature of contributions for the benefit of the employees, in 1945 totaled nearly $12 million, or more than the entire interest on the road's debt.

Concerning the Santa Fe's traffic, Mr. Gurley said that in the pre-war year 35½ per cent of the Santa Fe's total freight revenue came from products of agriculture, a pattern which he expected to return to the road quickly, since the war traffic had virtually ceased. He stressed the point that in serving agricultural communities competition was exceptionally keen and the road's customers "very conscious of costs." In addition Mr. Gurley quoted from various rate decision of the I.C.C. to the effect that rates on agricultural products were somewhat depressed due to conditions in the agricultural industry. "It is clear to me," Mr. Gurley declared, "that we are in no position to continue the existing wage scale, to say nothing of increases, without an increase in the charges for the services rendered the shipping and traveling public."

Must Have Funds to Modernize—The proceedings were continued on March 15, with further testimony by Mr. Gurley who said, "It would be a great tragedy in a great national era if the railroads get so squeezed that they cannot go forward with a program of modernization and improvement which all circumstances so plainly suggest and demand." This statement had been preceded by a discussion of the competitive efforts of the railroads, but with special emphasis on the Santa Fe, in order to hold traffic. In his testimony

he pointed out that faster schedules for both freight and passengers were an immediate post-war necessity, not only to minimize the airlines' competition for passenger traffic, but also to make it worth while for shippers of freight to continue to use rail service for transcontinental hauls, since ship running time from coast to coast via the Panama Canal with the faster vessels built during the war is between 12 and 13 days, compared with an average of about 15 days before the war and a pre-war rail freight service giving ninth morning delivery.

Mr. Gurley also declared that the employees as well as the management have a definite interest in seeing that freight trains get through terminals in a minimum of time and that all should co-operate to avoid stops merely to change crews.

Concerning the employees' contention that increased wages are justified by reason of greater productivity of the worker, Mr. Gurley declared, "My frank opinion is that there isn't anything about it (productivity) which supports a request for increased compensation by reason of employee efficiency. I think it is fair to say that the increased productivity of the railroad plant has made it possible for the railroads to pay higher wages to the employees while collecting a lesser amount from the traveling and shipping public than it would have been necessary to collect except for the benefits of the increased productivity."

Work "Engineered Out"—As an example of work which he said was "engineered out" of the railroad maintenance field, he cited the case of the track structure which, because of heavier rail, better and deeper ballast section, reduction in the number of rail joints because of longer rails, application of tie plates, treating of ties, heat treating of rail ends to reduce batter, and many other improvements, can pass a substantially greater amount of tonnage than formerly with the same or less maintenance work. Likewise other improvements to the plant, such as larger locomotives, Diesel locomotives, centralized traffic control, new sections of multiple track and better cars, have also "engineered out" man-hours formerly required to produce a given amount of transportation, he said.

Upon the completion of Mr. Gurley's testimony, Gustav Metzman, president of the New York Central, took the stand. He declared, "It should be clear to all—I thing it is crystal clear—that the railroads cannot support any wage increase whatsoever without an increase in their transportation charge." Railroad transportation charges, he asserted, are not only regulated by the I.C.C. and the various State Commissions, but also must be attuned to economic conditions, including competitive factors, the law of supply and demand, and other elements. "Just how much increase may be made in transportation rates before we encounter the law of diminishing returns is a serious question," he added.

Mr. Metzman asserted that although the arbitration boards had no direct jurisdiction of rail rates, "there is no escape from the economic and mathematical proposition that your decision will have a direct and profound relationship to those freight and passenger rates." He warned that proposed increases in rates must take into consideration their probable effects on the volume of traffic to be handled, adding, "It is most important in the permanent best interest of our employees that there be no wage scale requiring a level of transportation charges that will drive away business.

Uneconomic Wage Structure Harms Employees—"It will not serve the best interests of our employees, rather it would constitute a serious disservice to them, if the railroads were saddled with a wage structure that is beyond the capacity of the industry to sustain. It would mean the suspension of our pending program of rehabilitation, a reduction in service and a corresponding reduction in employment. It would mean a blighted industry, and those who would be hardest hit by such an eventuality are the railroad employees themselves. It should never be forgotten that excessive wage rates that cannot be supported by available revenues become little more than a mockery of paper rates for those who are laid off. Grocery bills and other household expenses require full employment and actual wages.

"We have the duty of facing, realistically and dispassionately, the facts and conditions which control the destiny of our industry. I appreciate that you have before you an intensely human issue, but I beg of you to remember that it is, also, an equally, an intensely practical issue."

The final carrier witness for the day was Dr. Jules Backman, an economist and a member of the faculty of New York University, who testified with respect to various cost-of-living budgets. In a discussion of the propriety of the use of the "Heller" budget as a measure of the adequacy of rail wages, Dr. Backman said that this budget assumes a family of four, that is the worker and three dependents, while a study of the railroad industry indicates that the average family of a rail worker includes only 1.86 dependents among the operating group or slightly less than 3 persons per family, and 1.64 dependents among the non-operating employees or 2.64 persons per family. For this reason, he believes the "Heller" budget overstates the incomes required to maintain the living standards contemplated therein. Dr. Backman also asserted that the income contemplated by this budget is far above the average annual income of workers in most industries, even though, he said, the American worker has by far the highest living standard in the world.

Living Costs and Real Wages—Dr. Backman's second exhibit dealt with the cost of living and real wages. According to the United States Bureau of Labor statistics, he said, and using the average of 1935 to 1939, the cost of living index rose from 100.8 in January, 1941, to 128.9 in September, 1945. On a long term basis, he said that for the first ten months of 1945 the cost of living index of 128.2 was only about 2 per cent greater than the 1926 index of 126.4.

On the other hand, Dr. Backman said that during the same period average weekly earnings of railway employees had risen from about $30 in 1926, to slightly over $50 in September, 1945, then fallen to $49.39 in October, 1945. Comparing real earnings which relates wages to the cost of living, he said that for the first seven months of 1945 real earnings were 17.1 per cent higher than in 1939, while for the month of October, 1945, they were 12 per cent higher.

Completion of Dr. Backman's testimony was postponed until a later date to allow the boards to hear the testimony on March 16, of Ernest E. Norris, president of the Southern and R. V. Fletcher, vice-president, research, of the Association of American Railroads, and also chairman of the railroad committee for the study of transportation. After a discussion of the competitive position of the railways, employee productivity, and safety, Mr. Norris declared, "It is obvious that the railroads are going to experience a rapid and serious drop in traffic volume that will make it necessary for the railroads, even with present costs, to ask for an increase in freight rates. It is obvious, too, that any increase in the present costs will mean that the necessity for requesting higher rates will be even more urgent, and that the request will have to be correspondingly higher. To raise freight rates too much would simply mean that the railroads' subsidized competitors would take more business away from them, that everyone, the employees, the owners and the public, would be the collective loser." Mr. Norris warned labor to heed President Truman's words of October 30, 1945, when the President said in part, "Labor must . . . not demand more than an industry can pay under existing prices and conditions. It has a stern responsibility to see that demands for wage increases are reasonable. Excessive demands would deny to industry reasonable profits to which it is entitled, and which are necessary to stimulate an expansion of production. We must not kill the goose which lays the golden egg.

Judge Fletcher—Judge Fletcher said that during the next five years the railways need to spend $1,272,271,000 to put their roadway and equipment into first class condition to meet the competition with which they are now faced, and that, in addition, $894 million should be spent on new freight cars, $500 million for passenger cars and $838 million for new locomotives. In total, he said, the roads should spend for new equipment and to overcome the effects of deferred maintenance, about $3 billion in the next five years.

Judge Fletcher also called the boards' attention to the fact that the motor carriers are now before the I. C. C. seeking to have that body raise rail rates, although he said there was prevalent in this country the idea that motor carriers would lower rail rates. Nevertheless he did not wish to minimize the importance of highway competition.

Wayne Johnston, president of the Illinois Central, was the first carrier witness at the hearing on March 18. Mr. Johnston declared, "I don't believe that the public interest can possibly justify a return of the railroads to the disastrous and disheartening earnings of the decade of the 'Thirties. The war has proved that the railroads are needed, that the standby service afforded by the railroads is indispensable to national safety and security and that the extensive capacity of the railroads to handle peak

loads in times of greater emergencies must be maintained. This required adequate revenues. But I must say here that to the extent that wage increases require increases in rates, our employees are jeopardizing their jobs by the fact that such increases help to divert our business to other forms of transportation.

Unit Costs Increasing—Mr. Johnston said that on the Illinois Central freight operating costs per 1,000 revenue net ton-miles had shown an increase in recent years, being $5.59 in 1941, $5.01 in 1942, $5.13 in 1943, $5.53 in 1944, and $6.43 in 1945. Excluding amortization of defense projects and charging, instead, normal depreciation, these same figures become $4.91 in 1942, $5.03 in 1943, $5.42 in 1944, and $6.14 in 1945. "The important factor to us," he declared, "is that costs have outrun the increase in productivity."

Mr. Johnston was followed as a witness by Thomas H. Carrow, superintendent of safety of the Pennsylvania, who testified regarding the carriers' safety record. Mr. Carrow said that in his opinion, the accident record of the past five years, which he explained was lower than that prevailing at any time in the 'Twenties, was not a normal rate in that the great increase in the number of employees combined with the loss of experienced men to the Armed Forces and the substitution of inexperienced men therefor, and the heavy traffic volume had resulted in a temporary increase in the accident rate. In his opinion the end of the war and the consequent return of experienced men plus the reduced volume of traffic would cause a sharp reduction in the accident rate in the immediate future.

The final carrier witness for the day was J. W. Smith, vice-president of operations, of the Boston & Maine and Maine Central, who testified with respect to the hazards of slack action, accidents due to failures of passenger or freight equipment, except locomotives, and the amount of work required of train crews.

Flow of Service Men Now Easily Handled

(*Continued from page 639*)

1944 and 10.54 per cent over 1943, while export grain unloaded at ports for every month beginning with April, 1945, has substantially exceeded the previous all-time high month (November, 1939) so far as records are available.

Incidentally, Mr. Kendall pointed out, the movement of grain across the Great Lakes, which requires rail transportation at both ends, showed an increase in 1945 of 71 per cent over 1939, which was regarded as a normal year for this traffic. The railroads are continuing efforts to distribute the available box cars equitably, he observed, and are giving particular attention to the demands of the western territory for cars for grain and grain products and other foodstuffs. The eastern and southern roads increased the delivery of empty box cars to the western lines from the January average of 1,011 daily to an average of 1,344 daily in February, and the roads serving the Northwest, where the demand is concentrated, increased their daily average box car supply about 2,002 cars during the first half of February and 2,822 cars during the second half, compared with the corresponding periods of the previous month, the C.S.D. chairman reported.

Although there has been some slackening in the demand for rough freight box cars, general requirements for box cars apparently will continue at present levels for the rest of 1946, it was explained. The government program for grain exports is scheduled to run through June, running into the period when this year's harvest must be handled, so that no sustained improvement in the box car supply situation is in sight.

Stock-Car Loadings Up—Loadings of stock cars in the first nine weeks of this year exceeded those of any corresponding period since 1932, and were 17.2 per cent over the 1945 figures, Mr. Kendall said. For the 10 weeks ended March 9 revenue coal loadings totaled 1,795,286 cars, slightly more than the total for the corresponding 1944 period, that being the year when coal production broke all records. Shippers and receivers were urged to handle coal cars with the utmost expedition, and railroads were advised to keep both loaded and empty cars moving, in order that the supply may keep pace with the present production rate. No difficulty was expected in meeting demands for gondolas or for flat cars, there being a surplus of short flats in some sections, but requirements for covered hopper cars continued in excess of supply.

Perishable loadings up to March 2 showed an increase of 5.8 per cent over the comparable 1945 period, and were expected to continue at an all-time high for the rest of March. Considerable improvement has been accomplished in the refrigerator car supply, Mr. Kendall noted, and fruit and vegetable loading were being protected on a current basis, though the situation remains "tight" in Maine, Florida, California, Arizona, the Red River valley, and the Midwest. Shipments of fresh fruits and vegetables in March were expected to be about 90,680 cars, making it one of the heaviest months on record in that respect.

The seriousness of the freight car detention problem was again referred to, with the comment that February showed 21.16 per cent of cars held beyond free time, as compared to 19.82 in January and 16.02 in February, 1945. "Some of this detention is due to numerous strikes throughout the country and much is due to the 5-day work week," Mr. Kendall explained. "The seriousness of this particular problem is apparent to all shippers and receivers and very active efforts are being made by members of the 601 freight car efficiency committees to secure more prompt loading and unloading of cars."

No Sharp Drop in Troop Travel—The peak movement of service men returning from overseas was reached in January, from which point it receded, as already noted, to less than a million in February, according to the report. However, there is no indication of any sharp reduction in this movement until "sometime late this summer," Mr. Kendall said. "The present forecast submitted by the Army and Navy indicates that there will be a continued steady return of personnel through both coasts until sometime during July, when practically all of the men eligible for discharge will have been returned." The outbound movement of replacement troops through the ports continues "steady," while some 65,000 prisoners of war were transported to ports on both coasts during February.

The monthly survey of the supply of freight equipment showed that there was a decrease of 824 in the number of serviceable cars on February 1 as compared to January 1. The bad-order percentage on February 1 was 4.2, compared with 4.3 on January 1, and with 2.4 on February 1, 1945.

February Operating Revenues 19.5 Per Cent Under 1945

From preliminary reports of Class I railroads representing 80.9 per cent of total operating revenues, the Association of American Railroads has estimated that the February gross amounted to $464,192,377, a decrease of 19.5 per cent below the $576,428,700 reported for the same 1945 month.

Estimated February freight revenues were $336,223,209 compared with $431,327,090, a decrease of 22.1 per cent. Estimated passenger revenues were $93,085,308 compared with $102,129,497, a decrease of 8.9 per cent.

Advertising to Feature Pennsylvania's Centennial

The Pennsylvania will feature its centennial in its magazine and newspaper advertising campaign for 1946. The theme will embrace the story of the parallel development of the railroad system and the industries which have grown up with the railroad and which it serves; in other words, a "teamwork story" involving industry and railroading over 100 years of transportation progress.

Since the Pennsylvania's first tracks were laid, some 10,000 individual enterprises, each connected by private sidings, have grown along its lines.

Canadian M. of W. Wage Case Before Labor Board

The National War Labor Board at Ottawa last week reserved judgment on a wage increase application which the Railway Association of Canada described as the opening of a new drive for general increases to Canada's 200,000 railway employees.

The application was made by the Brotherhood of Maintenance of Way Employees (A. F. L.) on behalf of some 30,000 workers on seven Canadian roads. The basis of the union's case was that men in the railways' maintenance of way departments were paid lower rates than men performing similar work in other departments.

The railways opposing the application said the increases asked would average 14 cents-an-hour and would cost $13,152,000 a year—a figure which the union said in rebuttal "seemed extravagant." The railways said the increase was asked at a time when revenues were starting to decline.

Railway officers said applications pending from various organizations would, if

approved, cost the railways a total of $58,000,000 a year and if the increase asked by the maintenance of way employees was extended to all other groups the total cost would be $72,530,000.

Largest group affected in the application was sectionmen for whom the union asked increase from the present range of 54 to 61 cents an hour to 70 cents.

The case was the first of major importance to be dealt with under the amended wage control regulations and expectations are that the board's decision will lay down principles in the administration of the new regulations.

Rail Capital Outlays Are Acts of Faith

(Continued from page 640)

House and is now before the Senate. Hearings are now being held by the Senate committee on interstate commerce. With your support the Bulwinkle bill can be passed and thus remove the threat of anti-trust prosecutions that would interfere with orderly transport regulation by the Interstate Commerce Commission. I ask your support for this constructive piece of legislation.

Top Priority Problem—"Another, and probably the most important, aspect in which this blueprint of national transportation policy has not been brought into actuality is in the spending of public moneys for transport facilities. Public investment in highways, waterways, airports and airways now exceeds private investment in railways. Private investment in railroads is taxable and must be self-supporting. This railway investment cannot live alongside of public investment in competing facilities unless the public investment is put on a self-supporting basis—thus giving the taxpayer a chance to get his money back.

"Under such a policy, people who use public transportation facilities would pay their way—through fair user charges and tolls, and through paying a fair share of taxes for the general support of government. To reach a workable relationship between public and private investment is, in my humble judgment, America's Number 1 transportation problem. I venture to suggest that you examine this problem of public transportation investment in the light of this question: Consistently with the American enterprise system, how may private capital investment in railroads live alongside public investment in highways, waterways, airports and airways?

"Your fellow Californian, Hon. Clarence F. Lea, chairman of the committee on interstate and foreign commerce of the House of Representatives, is one of the leaders in Congress who has worked hard and intelligently for a better understanding of the nation's transportation problems. He and his committee have asked all who have an interest in transportation to submit their views upon the problems I have just mentioned, and other problems as well. Doubtless the committee will hold hearings and other appropriate proceedings.

Urges Attention to Lea Inquiry—"You will be serving your own interest in sound and economical transportation, as well as the public interest, in giving all the attention you can to the Lea inquiry—to the end that our legislators may have the fullest understanding of the facts and of the interest of all the people in sound transportation."

Earlier in his address Mr. Metzman had set forth the New York Central's post-war plans as a detailed example of what the railroads are doing, now that "tomorrow is here." He told first of the "giant fleet of 720 post-war passenger cars" for which his road is "laying out $56 million of capital on this largest order of passenger cars in railroad history—large enough to equip 52 new streamlined trains." The N. Y. C. took delivery of the first of these cars—"the first post-war passenger car built in America"—on February 20.

Mr. Metzman explained that before the final blueprints for these cars were made, "every detail was studied and analyzed" in the light of N. Y. C. experience and that of other roads. Also, there was called in "a special post-war research committee" consisting of "10,000 people—the largest research committee of which we have any knowledge—all of them representative passengers on New York Central trains."

Getting Ideas from Travelers—This was a reference to the returns from illustrated questionnaire booklets which N. Y. C. distributed to its passengers some time ago. The survey, Mr. Metzman said, was well received by the traveling public, "as high as 93 per cent" of the questionnaires distributed having been filled out and returned with over half a million answers to a total of 172 questions. The returns have been analyzed in many ways, and Mr. Metzman said that "in the years ahead we can put punch cards on a sorting machine and get the answers to still other travel questions. Thus our passengers will continue to sit in with us as a continuing plans committee."

Meanwhile the railroads are not forgetting their freight service, Mr. Metzman went on. He pointed out that N. Y. C. representatives all over the country "are engaged in 'listening post' work, bringing in a continuous flow of information upon which to pattern freight service changes." He also mentioned the freight traffic studies of the Railroad Committee for the Study of Transportation, the research group sponsored by the Association of American Railroads and functioning under the chairmanship of A. A. R. Vice-President R. V. Fletcher.

Likewise is "special attention" being given to locomotives. In that connection Mr. Metzman mentioned N. Y. C.'s new series S-1 "Niagara" dual purpose, freight or passenger, steam locomotive. He also pointed out that his road has Diesel-electrics in both freight and passenger service, and is "finding out precisely where the Diesels will work to the best advantage." At the same time it is "participating in experiments, sponsored jointly by railroads and by coal operators, looking toward the development of a gas-turbine locomotive to burn coal as its basic fuel"; and it is "taking part in other new locomotive developments, too, such as the coal-burning turbo-electric."

Spending $100 Million, Plus—Summing up the new capital expenditures made and planned by N. Y. C., Mr. Metzman said: "Over two years, 1945 and 1946, we are spending for passenger and freight cars, and new locomotives, a total of $100 million—plus millions more for new bridges, docks, buildings and other roadway facilities. These railroad dollars, in terms of jobs for workers and the pay which those workersspend, will send out ripples in ever-widening circles of prosperity, like pebbles dropped in a pool, from Maine to California, from the Great Lakes to the Gulf of Mexico."

Turning to what N. Y. C. has been doing in the way of "blueprinting for better railroaders," Mr. Metzman told of that road's "broad program of public relations training" in which over 30,000 employees have thus far participated.

"This program," he continued, "is built around small discussion groups—groups that are provided with leadership but which are very largely run by the participants themselves. Discussion groups have been aided by a little booklet which we call 'Company Manners'. . . . The purpose of our public relations training program is to bring out practical every-day ways in which everyone in New York Central service, whether or not he meets the public in his work, can help to build the public good will that is so vital to the earning power, security and advancement of all. In California language, it is a program that will create in every employee a desire to be a 'booster'."

Employee Training—Also, the Central is training its employees to do their work well, having set up courses to cover many occupations such as traffic management, air conditioning, air brakes, locomotive firing, etc. And "present and potential supervisors are enrolled in supervisory training courses." In addition, the N. Y. C. "was one of the first railroads to establish apprentice training programs, many years ago"; and "it is one of two railroads in the country which recently signed an agreement with the Railway Employees Depart-

Tank Cars Again in Demand

The sudden decline in demands for tank cars immediately following V-J Day has since been reversed, due in part to the restoration of contracts for such cars suspended during the war emergency, in part to the resumption of short haul movements, and also to the sharp decrease in the number of serviceable tank cars caused by heavy retirements of old equipment and shopping of other units, according to advice to railroads from Chairman W. C. Kendall of the Car Service Division of the Association of American Railroads. For that reason it again is necessary, he emphasized, for carriers and their employees to give close attention to measures that will bring about faster handling of such equipment, in order that the needs of users may be promptly and properly protected.

ment of the American Federation of Labor, establishing a new era of cooperation in apprentice training between railroad management and railroad labor."

About 30,000 Central men and women served in the armed forces and 12,500 of them have already returned to their railroad employment, Mr. Metzman said. In addition, the road has employed 8,000 veterans of World War II who never before worked for a railroad.

Having thus taken his audience on what he called "this informal journey behind the scenes," Mr. Metzman proceeded to his appeal for support on the matter of implementing the national transportation policy. "You are," he told the shipper representatives, "our partners in creating the strong, healthy railroads that are just as vital to the well-being of the nation in the years of peace as they were to an America in the crisis of war. May I ask you, as our partners, to look at the situation facing American transportation today and consider what you may do to advance the important interests you share in common with us."

January Ton-Miles

The volume of freight traffic handled by Class I roads in February decreased 17 per cent under the corresponding month of last year, according to the Association of American Railroads. Traffic in February amounted to approximately 46 billion ton-miles, according to preliminary estimates based on reports to the association.

The following table summarizes revised statistics for the year 1945, and January, 1946, and preliminary figures for February, 1946:

	1945	1944	Per cent Decrease
December	46,295,117,000	57,176,414,000	19.0
Year (final)	680,671,394,000	736,826,301,000	7.6
	1946	1945	
January	[a]49,000,000,000	56,845,141,000	14.7
February	[b]46,000,000,000	55,462,959,000	17.0

[a] Revised estimate.
[b] Preliminiary estimate.

Sees Need for Early Freight Rate Increase

With traffic volume continuing to decline while fuel, material and other costs remain on the upgrade, "a freight rate increase at an early date appears to be the only answer, even without consideration of the additional wage increase demand now being arbitrated," President Roy B. White of the Baltimore & Ohio told the Traffic Club of Wilmington, Del., last week.

Pointing out that the railroads "are prominent among the few types of business whose product is selling no higher now than at the beginning of the war," Mr. White went on to say that "it would be a good thing for all of us if the railroads could carry on on that basis." He added, however, that "it's just not in the cards."

Staggering Amount Already Absorbed—"The railroad industry," he continued, "absorbed a billion dollars of additional costs a year beginning with 1942, representing an increase of nearly 30 per cent in wage rates and material prices. This staggering amount was absorbed without increasing freight rates—only because of the record-breaking wartime traffic volume.

"The Bureau of Transport Economics and Statistics of the Interstate Commerce Commission, disinterested and competent agency, estimates that traffic volume will drop to the 1941 level. If present wage, material and supply costs had been in effect in 1941, railroad net income of $500,000,000 for that year would have been turned into a deficit of $250,000,000.

"If railroad revenues are adequate to compensate them for their increased costs, they are prepared to make a great contribution to American prosperity. They are one of this country's largest purchasers, and I believe the heaviest purchaser of heavy goods. You cannot recall a time when this country was prosperous that heavy goods were not being used in a big way. In normal times our railroads are the largest purchasers of coal and among the several largest purchasers of iron, steel, oil, lumber, chemicals, and other basic commodities.

War Earnings Used Prudently—"The railroads used their substantial wartime earnings to put their house in order. They reduced their debt by about $800,000,000 and their interest charges by more than $30,000,000 during the years 1941, 1942, and 1943. Additional substantial reductions have been made since then. At the same time the heavy volume of wartime traffic made it essential for them to make important improvements in their line, their structures and their equipment, and although there is undermaintenance in some respects, and notably in rail renewals, on the whole they are in the best physical shape in their history and better prepared to do an increasingly efficient operating job.

"But there is much more that they can do to improve their operations, provided they can show a balance sheet which will command respect in the financial markets. Orders which they have already placed for new equipment total almost a billion dollars. We have improvements on the Baltimore & Ohio alone for the next two years which are budgeted at upwards of $30,000,000."

Earlier in his address Mr. White had deplored the spread in this country of the "philosophy of scarcity," suggesting that one of private enterprise's principal educational jobs should be "to convince the workers of the country of the real truth back of our success as a nation and that our only real hope for true prosperity lies in greater production." He believes that the war has created one favorable circumstance for this teaching job in that "millions of American soldiers and sailors have just come back from countries around the world" where they have "seen and learned all they want to know about the living standards of other countries."

Mr. White also discussed the subsidized competition which the railroads have to face, arguing against the pending proposal to approve the agreement with Canada for construction of the St. Lawrence seaway project. All the railroads ask, he said, is "equality of opportunity." Their wartime achievement in performing "the greatest land transport job in history" has built in the industry "an alert, confident and determined spirit." The railroads, Mr. White continued, "know that they can outhaul any and all competitors in handling industry's mass need—and at the lowest cost."

Government "Pampering" Wrong, Says Highway "User"

The federal government should not "pamper any one form of transportation to the disadvantage of the other," and laws and regulations affecting transportation agencies should be designed to "foster development and not to impede it." This was the message conveyed to the annual convention at Albuquerque, N. M., of the New Mexico Cattle Growers Association by Arthur C. Butler, director of the National Highway Users Conference, in a March 19 address, according to the conference.

"Insofar as highway transportation is concerned," he said, "its future should be determined by the will of an informed people." Nevertheless he saw that future considerably dependent on "sound" public policies of taxation and regulation, and sounded a warning against the use of "special highway taxes" for "non-highway" purposes and against the "unwise and uneconomic" dispersion of state motor vehicle taxes to local units of government for "unrestrained" use.

The public will get the most economical

Pennsylvania Speeds Up N. Y.-Chicago Runs

Cutting an hour from its schedule, the "Broadway Limited" of the Pennsylvania between New York and Chicago, will make the run in 16 hours, beginning Sunday, April 28. On the same date other principal P. R. R. trains between the eastern seaboard and midwestern cities, including the "General," the "Trail Blazer," the "American," the "Cincinnati Limited," and the "Red Arrow," will be materially speeded in schedule, with reductions in running time up to one hour.

In this first step to quicken passenger runs slowed by wartime demands, the road will restore the luxury "Broadway" to the fastest schedule ever made by train between New York and Chicago.

Returning to the faster 17 hour schedule between New York and Chicago will be the "General," the "Trail Blazer," the "Admiral," the "Golden Arrow," and the

"Pennsylvanian," representing cuts of from 45 minutes to one hour in running time. Other trains in this service will be quickened, including the "Pennsylvania Limited" westbound, and the "Manhattan Limited" and "Gotham Limited" eastbound.

The running time of the "American between New York and St. Louis, will be reduced 45 minutes, and the "Cincinnati Limited," between New York and Cincinnati, will be faster by 30 minutes westbound and 15 minutes eastbound.

The "Red Arrow," from New York to Detroit will be 25 minutes faster eastbound and 15 minutes faster westbound. The "Clevelander," between New York and Cleveland, will be faster by 25 minutes westbound and 15 minutes eastbound.

Wage and Rules Case Hearings Under Way

(*Continued from page 641*)

service) shall be guaranteed not less than 3,000 mi. per month exclusive of all other allowances except road overtime.

Rule 12 would require that road trainmen receive not less than the local freight rate of pay for the following: Local or way freight, mine run, snow plow, pusher, helper, roustabout, road switcher, work, wreck, construction and unclassified service.

Rule 13 would require that all work performed between 6:30 p.m. and 6:30 a.m. shall be increased ten cents per hour; this would apply to local freight, transfer or belt line, mine run road switcher, yard and unclassified service.

Rule 14 would establish a basic daily wage differential of $1.50 for yard conductors (firemen) over the basic rate for yard trainmen (helpers).

Rule 15 would require that both engineers and trainmen in freight and passenger service be paid for all delays in excess of 15 minutes intervening between the time the crews are required to report at the initial terminal and before departure from the terminal.

Rule 16 provides the final terminal delay rule and applies to both engineers and firemen. This proposal applies to both freight and passenger service and would require that the crew members be compensated on the minute basis for all time delayed after arrival at the home terminal.

Rule 17—Held at other than home terminal. This proposal is submitted on behalf of both engineers and the trainmen. This change provides that for all time held at other than home terminal in excess of twelve hours shall be compensated therefore at the pro rata rate; and that such payment shall be made separate and apart from subsequent service or deadheading.

Rule 18—Held en route. This change applies to both enginemen and trainmen and covers all road crews. It proposes that road crews shall be compensated for all time held on a minute basis, with a minimum of one hour at pro rata rates in addition to all other time or mileage made on the day or trip.

Rule 19 is submitted jointly in behalf of both engineers and trainmen and relates exclusively to road service. It is intended to preserve the differences between local freight rates and through freight rates, and to preserve the higher local rate to the type of service for which they are intended.

Rule 20 provides that all engineers and trainmen shall be compensated for time spent in attending investigations, instructions, examinations, time required for the exercise of seniority and consumed in physical examinations required by the carrier.

Rule 21 provides that crews shall not be used to perform more than one class of service and covers both engineers and trainmen in yard and road service.

Rule 22 proposes that engineers and trainmen that are required to deadhead shall be compensated therefor.

Rule 23 provides that engineers, trainmen and yardmen shall be compensated while attending court at the carriers' request.

Rule 24 covers lap-back, side trips and doubling of hills. It provides that when a crew is required to make a lap-back trip, to make a side trip or to double hills, it shall be paid not less than an additional minimum day's pay. This change applies to both engineers and trainmen and covers road service only.

Rule 25—Rate of pay for Sundays and holidays. This proposal is intended to provide compensation at the rate of time and one-half for all services performed on the holiday specified.

Rule 26—Proposed for both engineers and trainmen, specifies that they should go off duty at the same point where the tour of duty commenced.

Rule 27 provides that when foreign line trains or trains from another seniority district are being detoured, that an engineer and conductor from the district over which the detour is being made shall be used as pilots. This shall also apply where the engineer or conductor on the ohter train are not familiar with the territory over which the train is being operated.

Rule 28 is proposed for the benefit of both engine and train crews in all road service, except in short turnaround service or other rules applicable. It provides that when a crew arrives at a terminal of the run, it is then automatically released; that if any additional services are required of the crew, a new day is thereby begun.

Rule 29 provides that in all classes of road service, crews shall consist of one engineer, one fireman, one conductor, and at least two brakemen; and that there shall be one additional brakeman in local, mine-run, work, wreck and construction service.

Rule 30 specifies seven types of work all "within the switching limits" as yard work. Its purpose is to preserve yard work for yardmen and is submitted on behalf of the trainmen.

Rule 31—Yard service—new work. This item is designed to provide compensation at punitive rates when enginemen and trainmen are required to perform "new work" after having been on duty the minimum of hours of their assignment. New work is defined as work not a portion of the regular programmed or routine work of the crew.

Rule 32. This proposal relates to the members of all road crews other than passenger. It stipulates that such regular crew members shall be released as a unit.

Rule 33 stipulates that a freight train shall not exceed 3,000 ft. overall, with the slack out, or 70 cars, and that a passenger train shall be confined to 1,200 ft. overall with the slack out, or not in excess of 14 cars. This proposal is submitted in behalf of both engineers and trainmen.

Rule 34 provides that two locomotives may be used in double-heading and helper service only in specified cases. This operates to limit substantially the practice of using two locomotives to permit the hauling of longer trains: it does not, however, affect the use of helper engines in helper districts which now exist or in the establishment of new helper or pushing districts in territory which has grades in excess of one per cent.

Rule 35 provides for a graduated number of days of sick leave annually for engineers and trainmen, to be based on the employee's length of service. It stipulates that sick leave not absorbed during one yar may be accumulated and carried over into the succeeding year.

Rule 36 is intended to prevent crews from being tied up at points where satisfactory and adequate eating and sleeping accommodations are not available.

Rule 37 prescribes that locomotives and cabooses shall be equipped with suitable awnings, windshields, approved seats, cold drinking water and that electric lights shall be installed in all cabooses.

Rule 38 stipulates that engineers and firemen will not be required to flag or throw switches.

Rule 39. This proposal requires that coal of proper size shall be placed on tender and kept within the reach of the fireman on the deck of the locomotive at all times.

Rule 40 requires that the appointment of yardmasters and their assistants shall be taken from the ranks of yardmen.

Rule 41 prescribes that when a carrier selects a road foreman or assistant road foreman of engines, the selection shall be made from the ranks of the engineers and in the seniority district where the vacancy exists.

Rule 42 stipulates that the carrier shall take charge of the furnishing and inspection of watches. The employees are not asking that the carrier assume the cost of the watch, but that the carrier should assume the burden of cleaning and repairing and pay the employee for time consumed for this purpose.

Rule 43 proposes that when employees are required to wear uniforms, these are to be supplied, cleaned and pressed without cost to employees.

Rule 44—Offices for passenger conductors. Suitable desk and seating space for the exclusive use of conductors must be provided on all passenger trains.

Rule 45—Savings clause. Existing differentials and existing rules where considered more favorable locally—are to be retained in the event of conflict with any of the foregoing.

In addition to the above changes Mr. Miller gave an outline of the rate changes requested by yardmasters and dining car stewards. That completed the employees' opening statement.

Carriers Opening Statement — The hearing continued on March 13, with Edwin A. Lucas, attorney, appearing for the carriers in the wage case. Mr. Lucas declared that the carriers are no less interested, than are the employees, in seeing that the latter have a fair and adequate wage, but that they are now out of the period when cost meant practically nothing and are already launched upon a period where they have to reckon the cost, if the railroads are to continue as a sound and solvent enterprise. Wage increases granted since 1940 total approximately $650 million annually and during the same period the cost of material and supplies rose approximately $350 million, he asserted, adding that these factors plus the anticipated increased cost of steel and other supplies, make it impossible to absorb further staggering increases in operating expenses now that the tremendous war-time volume of freight and pasenger traffic has ceased.

Mr. Lucas cited average earnings of the employees represented in these hearings, and presented data to show that with the basis of pay for road passenger crews 100 miles with a 5-hr. factor the actual pay increase would not in all cases be confined to the $2.50 per day that is requested, but in many cases would double and in some cases would be trebled.

The attorney stated that at the end of 1945, the railroads had reduced their funded debt approximately one billion dollars and explained that this was possible because of the greatly expanded war-time revenues. This reduction in the funded debt has brought about a savings of 46 million dollars in the annual carrying charges, he said, adding that if the demands of the employees were granted all the railroads have thus accomplished would be wiped out.

Rate Rise Already Needed — Mr. Lucas asserted that the 10 per cent increase in passenger fares, which became effective February 10, 1942, permitted the railroads to absorb the one billion dollar increase in wages and material costs of the war years. Since the traffic volume had already started a downward trend, he said that the carriers would be compelled to go to the Interstate Commerce Commission and request an increase in rates, not only to equate revenues to the costs that have already mounted during the period of the suspension of freight rate increases, but also to offset whatever may be further added to expenses by the outcome of this proceeding.

Mr. Lucas closed with a resume of the relationship of the value of wages to the value of the product in various industries. In the railroad industry, he asserted, the relationship was 46.6 per cent; machinery, 23 per cent; iron and steel, 19.9 per cent; rubber products, 17.9 per cent; automobiles, 16 per cent; food, 8.6 per cent and petroleum and coal 5.9 per cent.

Appearing for the carriers in the rules case Mr. Neitzert asserted that the proposed rule changes cannot be measured in dollars alone, but that the cases combined involve about 1½ billion dollars per year to the Class 1 carriers. More important than money, he added, these cases involve the quality of service, efficiency and flexibility of operations and freedom to compete with other transportation agencies.

Origin of Rules—Mr. Neitzert continued to his resume of the origin of the rules involved. He pointed out that employees have demanded more voice in the writing of these rules and in this way have

compelled the carriers to accept rules having for their purpose increased compensation for the employees, while decreasing the quantity of service performed.

According to the counsel, the carriers have initiated this rules movement for the purpose of restoring the original meaning and effect of certain rules that now appear in the schedule books, but have been interpreted differently from their original intent.

Mr. Neitzert declared that present contracts and interpretations thereof interfere with rail operations in eight primary ways, viz, by curtailing the right of management (1) to establish and eliminate yard engine service; (2) to designate switching limits; (3) to fix starting time of yard crews; (4) to schedule turn-around freight runs; (5) to establish inter-divisional runs; (6) to reduce the number of crews used in passenger service; (7) to designate the point for going on and off duty; and (8) to tie up crews. These eight issues in the operating employees' rule case, he asserted, involve 63 proposals that would free the carriers of what they feel to be undue and inappropriate interference with the management of railway operations.

Arbitraries and Special Allowances—Mr. Neitzert continued at the March 14 session when he outlined the carriers' position in regard to arbitraries, special allowances and gift days. He stated that the carriers proposed to eliminate the payment of gift days when the employees were paid for their miles and hours. In reply to a question by the chairman, Mr. Neitzert asserted that this would not eliminate the theory of assigned runs, as it would not change the basic day or overtime rule or any other rule, but that it merely provides for single payment for a single day's work.

In regard to the employees' proposed rule change in connection with "lap back and side trips" the attorney asserted that the unions' proposal that crews in any class of road service required to make a lap back trip, side trip or double hills, shall be paid not less than a minimum day at the rate applicable, for each such trip or double, this in addition to all other time earned on the day or trip, would permit certain train crews to earn as many as 17 days' pay in one working day.

Mr. Neitzert asserted that these proposals were served on the carriers in July, 1945, and at that time it appeared that those rules were proposed by the unions as a means of increasing the compensation of railroad employees without running afoul of the wage stabilization program. However, he called the board's attention to these facts: (1) Inequalities were to be eliminated and inequities abolished by giving everybody a wage increase, and (2) the proposals were so drawn as to result in pyramiding wage increases for certain employees, thus creating inequities and inequalities.

Rules Affecting Stewards—In regard to the proposed rules changes affecting dining car stewards, Mr. Neitzert asserted that the work of the dining car steward is essentially different from the work of engineers, trainmen, firemen and conductors and that the unions found it necessary to revise and modify the rules lifted from the trainmen's operating schedule in an effort to give them an appearance of workability. The result is a hybrid schedule of rules which, when applied to actual dining car operations, will force the carriers to triple the compensation now paid for this service. This situation will be caused by the penalty pay for late arrivals, payment on a mileage basis and penalty pay for excess miles.

Concluding his statement, Mr. Neitzert declared that an attempt is being made to divorce the yardmasters from management, although the sole duty of yardmasters is to manage and represent the management in the operation of yards and terminals. Mr. Neitzert pointed out, that to apply the same rules with respect to attending investigations to yardmasters as to switchtenders, when one of the duties of a yardmaster is to conduct investigations and to call the switchtender in and interview him seems to be an anomaly of the first degree.

The employees' first witness was J. P. Shields, first assistant grand chief engineer, Brotherhood of Locomotive Engineers, who explained how the strike ballot was taken and stated that 96.5 per cent of the employees represented by the B. of L. E. voted to strike. D. A. Mac Kenzie, vice-president, B. of R. T., was the next witness, who told the board about the distribution of strike ballots by his organization and who claimed that 141,003 members voted for a strike against 2,030 who voted against a strike, or a percentage of 98.58 per cent in favor of a strike.

Johnston Testifies—The employees' next witness was Grand Chief Engineer Johnston of the B. of L. E., who stated that never had he known the employees to be as wrought up over what they consider to be inadequate wages as they were today. In reply to a question by the chairman, the witness stated that engine, train and yard employees had received only 24 cents per hour increase since 1928. He also stated that the present situation was serious, and that the men are no longer willing to go along with the increases like those received in the past. He recalled the wave of outlaw strikes which followed World War I and stated that no one wishes to see a repetition of those occurrences. Mr. Johnston under cross examination declared, "We are not going to let you come in here and rape our schedules, that we have had for years and built up, and take them all away from us and take away those rules we have had that corrected abuses."

The hearings on March 15, opened with a statement by the chairman that the board had received a letter from Wellington Roe, New York, chairman of the National Rank and File Association, requesting that he be heard at these proceedings. At the request of A. F. Whitney the board denied Mr. Roe's application on the grounds that he is not a designated bargaining agent and that he is not a party to the proceedings. Counsel for the carriers did not enter into the discussion.

Next came a succession of union witnesses, making specific presentations in support of the various rules changes proposed.

Miller for Short Lines—At the March 18 session the chairman stated that C. A. Miller, vice-president and general counsel, American Short Line Railroad Association, entered a statement in behalf of that organization. According to Mr. Miller the carriers he represented are in a somewhat similar position to that of the Chicago, North Shore & Milwaukee and the Chicago, Aurora & Elgin, mentioned above. He said that on practically all of the 77 short line roads there have been no collective bargaining negotiations for wage increases or rules changes. As to two or three of them, there has been some negotiation, but, as to the remainder, the representatives of the employees served their demands on the managements and dates for conferences were set as required by the Railway Labor Act. However, when the conferences were held, it was found that the representatives had no authority to enter into collective bargaining. Their authority was limited to only the acceptance of an agreement acquiescing in their demands.

Mr. Miller further contended that the services of the Mediation Board were not invoked and that there has been no mediation proceedings with respect to any of the 77 carriers represented by him. He also maintained that the taking of a strike vote prior to mediation was illegal—that the emergency was illegally created and the short lines were illegally before this board.

The New York, Susquehanna & Western announced this week that it has joined with other roads in similar circumstances in asking that it be excluded from current proceedings before the board. "Our action in declining to join with the other carriers," explained Frank C. Kronauer, general manager of the Susquehanna, "is prompted by the simple fact that rules agreed to on a national basis might be acceptable to large railroads, but could be unreasonable in their application to the operations of a smaller line like the Susquehanna. Insofar as wages are concerned we naturally do not want any discrimination against our employees as compared with employees of other railroads. We expect to adopt any new wage scale that is accepted generally by other carriers providing, of course, that such a wage scale does not compel the Susquehanna to operate at a loss."

Rock Island Revamp Delayed

Intimating that the Interstate Commerce Commission may be asked to review the entire matter, Federal Judge Michael L. Igoe at Chicago has continued to April 25 the hearing on confirmation of the reorganization of the Chicago, Rock Island & Pacific. At the same time the court gave the following five reasons for delaying the proceedings at this point:

(1) Present hearings on proposed railroad reorganization legislation in the Senate. (2) Studies by the House of Representatives judiciary committee "which have been very critical of the court's handling of the case." (3) Pendency of appeals in this case before the United States circuit court of appeals, and of another case in the Supreme Court. (4) Opposition of preferred stock and convertible bondholders to confirmation of the plan. (5) The opinion of "the man in the street" who can't understand why a railroad with $78,000,000 in

cash can't pay off a first mortgage of $60,000,000 on which unpaid interest amounts to $21,000,000 or $22,000,000.

The judge also stated in his oral opinion that he believed the recent action of the court of appeals in staying action in his court to make the plan effective was "a supersedeas order."

Freight Car Loadings

Loadings of revenue freight for the week ended March 16 totaled 799,882 cars, the Association of American Railroads announced on March 21. This was an increase of 13,680 cars or 1.7 per cent above the preceding week, a decrease of 16,674 or 2 per cent below the corresponding week last year, and an increase of 14,687 cars or 1.9 per cent above the comparable 1944 week.

Loading of revenue freight for the week ended March 9 totaled 786,202 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, March 9

District	1946	1945	1944
Eastern	152,730	152,754	154,871
Allegheny	166,119	164,953	173,500
Pocahontas	59,501	51,016	54,651
Southern	137,888	123,302	125,671
Northwestern ..	87,620	80,001	81,262
Central Western	120,656	122,608	119,946
Southwestern ..	61,688	72,421	70,364
Total Western Districts	269,964	275,030	271,572
Total All Roads	786,202	767,055	780,265
Commodities:			
Grain and grain products	47,160	40,650	45,506
Livestock	15,205	13,268	14,247
Coal	187,708	157,262	171,343
Coke	13,031	14,948	14,918
Forest Products.	42,035	42,436	43,929
Ore	9,819	16,555	13,241
Merchandise l.c.l.	122,023	97,810	104,130
Miscellaneous ..	349,221	384,126	372,951
March 9	786,202	767,055	780,265
March 2	782,397	785,736	786,893
February 23 ...	723,281	772,396	780,984
February 16 ...	707,054	784,703	774,237
February 9	713,240	755,832	793,181
Cumulative total: 10 weeks	7,318,929	7,608,933	7,879,974

In Canada.—Carloadings for the week ended March 9 totaled 68,356 cars, as compared with 66,083 cars for the previous week and 69,287 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
March 9, 1946	68,356	37,012
March 10, 1945	69,287	41,946
Cumulative Totals for Canada:		
March 9, 1946	651,070	344,085
March 10, 1945	647,838	361,440

Twentieth Century Limited Back on 16-Hr. Schedule

The New York Central's Twentieth Century Limited will be put back on its prewar schedule of 16 hrs. for the run between New York and Chicago, effective April 28. The present running time is 17 hrs.

Other principal New York-Chicago trains of the Central will at the same time have their schedules reduced from 18 to 17 hrs. The schedule of the Southwestern Limited from New York to St. Louis will also be reduced by one hour and that of the Knickerbocker by two hours.

Court Enjoins Two Chicago Switching Lines

Federal Judge Elwyn R. Shaw, Chicago, on March 14, granted a preliminary injunction prohibiting the Chicago River & Indiana and the Chicago Junction, from continuing in effect the changed methods of operation instigated by those lines on February 1, as a result of demands by the Brotherhood of Railroad Trainmen, Brotherhood of Locomotive Firemen and Enginemen and Brotherhood of Locomotive Engineers that employees of other railroads be prohibited from performing certain work on the rails of the C. R. & I. and the C. J. The new operating methods were opposed by eight eastern lines who charged that the change damaged them to the amount of $10.96 per car of outbound loaded livestock and further that the settlement deprived them of trackage rights granted them in an order of the Interstate Commerce Commission in 1922. (*Railway Age*, February 23, page 414.)

Although the unions had secured the settlement, the effects of which are now enjoined, under threat of strike action against the two lines, A. F. Whitney, president of the B. of R. T., said, after learning of the court's order, that the members of his union would respect the preliminary injunction; but that attorneys representing the organization would ask the court for permission to intervene in the proceeding so that the rights of the union might also be determined.

Club Meetings

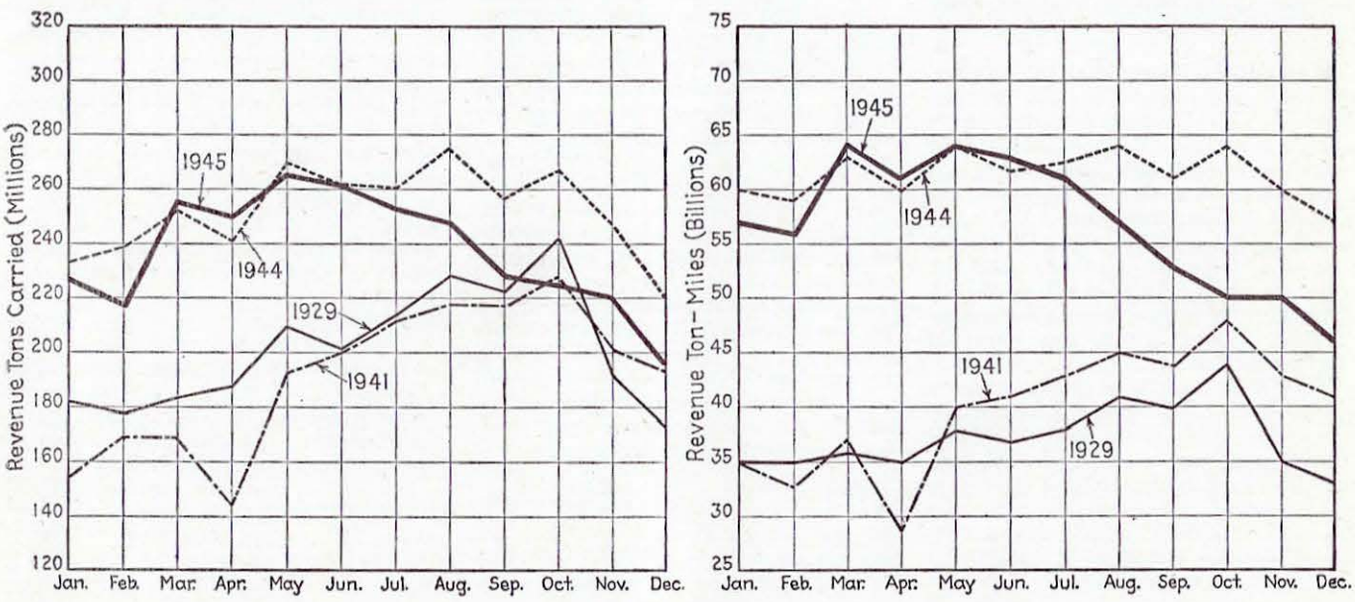
The Eastern Car Foremen's Association will meet April 12 at 8 p. m. at the Engineering Societies Building (29 West 39th street), New York City. Clarence E. Hatch, assistant chief mechanical inspector, New Haven, will present a paper on the "Methods of Test and Examination of Steel."

The New York division of Railroad Enthusiasts will meet March 27, 7:45 p.m. in room 5928, Grand Central Terminal. Speakers will be Capt. Robert S. Mounce, formerly with the Erie, and Sgt. William M. Curtis, both of whom were connected with the military railway service during the war. Also, two films will be shown.

The nineteenth annual session of the Pacific Northwest Advisory Board will be held in Portland, Ore., March 26-27. Speakers will include T. J. O'Shaughnessy, public relations officer of the Chicago, Rock Island & Pacific, and C. R. Megee, vice chairman of car service division of the Association of American Railroads.

The Toronto Railway Club will meet March 25 at the Royal York hotel, at 8 p.m. W. D. Lamont will be the speaker and has chosen as his subject "From War to Peace."

The Pacific Railway Club will hold its twenty-ninth annual meeting and banquet at the Palace hotel, San Francisco, March 28 at 6:30 p.m. The principal speaker will be L. Harold Anderson, president of the Railroad Commission of the State of California. The topic of his speech will be "California's Future Depends upon Transportation."



Revenue Tons and Revenue Ton-Miles—1945 Compared With 1929, 1941 and 1944

With the Government Agencies

Favors Barge Line Differential Rates

"Inferior service" basis for proposing joint rates less than all-rail

In a proposed report in the long-pending No. 26712 and related proceedings, dealing with the general question of rail and barge joint rates, Examiner Howard Hosmer has recommended that the Interstate Commerce Commission should prescribe suggested differentials to be deducted from first class all-rail rates between selected key points in determining the corresponding reasonable rail-barge, barge-rail, or rail-barge-rail first class rates. Other class and column rates would be determined on a percentage basis. In general, the examiner's proposals follow those sponsored by the Inland Waterways Corporation's Federal Barge Lines.

The title case is an investigation instituted in 1935 by the commission on its own motion, in which, in view of changes in statutes and in commercial and transportation conditions since that date, the basic question now to be decided, according to the examiner, is whether the commission should exercise its authority under section 15(3) and 307(d) of the Interstate Commerce Act to establish through routes and joint rates applicable to rail-barge shipments, and particularly, in view of the railroads' consent to the establishment of such joint rates if no lower than all-rail rates, whether the commission should find justified, and therefore prescribe, differentials favorable to the joint operations. In addition to making an affirmative finding as to these issues, Mr. Hosmer discussed various related questions raised since this investigation was opened.

Many Joint Rates Available—Generally speaking, some form of rail-barge joint rate, applying to the barge operations on the Mississippi, Ohio, Missouri and Illinois rivers and between New Orleans, La., and Port Birmingham, Ala., via Mobile, is now available to most points east of the Rocky mountains, the report noted, and so far as class rates and most commodity rates are concerned, these joint rates are based on a 20 per cent differential under all-rail rates. A lesser number of rail-barge-rail joint rates is effective.

While this situation developed under a general formula laid down by the commission in the 1920's, there has been almost unanimous agreement among the railroads and water carriers, according to the report, that the present system of joint rates with the barge lines should be discarded and replaced with an entirely new system. An appraisal of the extent to which differentials should be prescribed, if at all, depends, it was indicated, on several factors, including the cost of service, its value to shippers, and the general policy of Congress.

The major controversy as to costs, Mr. Hosmer remarked, relates to whether traffic can be moved more cheaply over rail-barge or all-rail routes. The "implications" from the vast volume of cost evidence presented "may be regarded as more favorable to the rail carriers than to the barge lines," he said, but such comparisons "reflect only general trends," though they do lend support to the view generally held that "such economy as there may be" in barge transportation varies directly in proportion to the length of haul. Neither the railroads nor the barge operators were satisfied with the results of the cost studies. The federal barge line argued that barge costs were based on "pioneering" operations which should not be taken as a standard, while the railroads contended that rail costs were overestimated and that "hidden" costs, namely the government's expenditures for the construction and maintenance of the waterways used by the barges, should be taken into account.

Public Aids "Not Pertinent" — Whether or not the "public aid" afforded the barge lines amounts to "favoritism which is unfair to the railroads," the examiner said, is a matter of broad public policy, "not pertinent to this investigation." While

(*Continued on page 653*)

Building Limitation Order

After several weeks of discussion, the federal government's housing and production control agencies were reported early this week to have whipped into final form a new limitation order rigidly curtailing the use for other than low-cost residential building of many materials entering into building construction, and its promulgation was expected momentarily when this issue went to press.

It is understood that practically all new construction for industrial, commercial and amusement purposes, except under government priority, will be brought to a halt by this order, although maintenance and repair operations, particularly those not using materials needed for the housing program, are not expected to be greatly affected. Railroad track and bridge work, therefore, apparently will be interfered with, if at all, much less than the construction of new stations or office buildings. The effect on equipment building was not clearly indicated by advance comment, but probably would depend on the extent to which necessary materials may be demanded for the housing program.

Restates Limits on Rail-Owned Trucking

I. C. C. adds a restriction to authority eight years after granting it

The Interstate Commerce Commission, in a report on reconsideration in No. MC-F-445 and related proceedings, has in effect restated the basic principles upon which certificates authorizing railroad acquisition of truck lines will be framed to insure that the highway service to be provided will be definitely limited to that which is auxiliary to, or supplemental of, train service. The case grew out of the acquisition by the Rock Island Motor Transit Company, a subsidiary of the Chicago, Rock Island & Pacific, of the White Line Motor Freight Company, authorized by the commission in 1938.

With the present report the commission majority has exercised what it holds to be an implicit, though not specifically reserved, right to determine later what restrictions should be imposed on that authorization to limit Transit's service to that auxiliary to or supplemental of rail service, even though no such restriction was included in the original authorization. The report indicated that Commissioners Alldredge and Patterson concur in the result, while Commissioners Porter and Mahaffie join, with certain exceptions, in a vigorous dissent by Commissioner Miller.

Miller Objects—In the words of this dissenting expression: "Eight years ago we approved and authorized the purchase by Transit of operating rights of White Line, then claimed under the 'grandfather' clause. In doing so, we found that Transit proposed to render, under the acquired rights, an all-truck service between points also served by the trains of its parent railroad as well as a truck service coordinated with that train service. There is nothing in that report limiting the operating rights to be acquired to prevent such service being rendered. That transaction was consummated and a certificate was eventually issued to Transit covering the rights, also without restriction as to the kind of service authorized.

"For eight years Transit has rendered motor carrier service under those rights, without question that it was rendering the lawfully authorized service. Without affording Transit an opportunity for hearing on the question, the majority now deprive Transit of its rights to continue to render the kind of service which it has been rendering by imposing restrictions . . . limiting the service authorized to that which is auxiliary to, or supplemental of, train service of the parent railroad. The majority

(*Continued on page 655*)

Says More Air Mail Would Be Expensive

But Post Office report favors its development—loss to railroads belittled

Legislation should be adopted at once providing a domestic air postage rate of five cents per ounce to remain in effect until a lower rate is within the means of the Post Office Department, or until it reaches the conclusion that conditions permit transporting all long-haul first class mail by air, according to a report to the postmaster general by Gael Sullivan, second assistant postmaster general, entitled "The Future of Air Mail Transportation," which sets forth the results of a study of the possibilities for developing the air mail service.

One of the ultimate goals of the department's program to enlarge its air mail activities is possibly indicated in the conclusion presented in the report that if all first class mail traveling 301 miles or more were carried by air at a postage rate of 3 cents per ounce, the air operation would show a substantial profit—around $45 million on the 1944 volume of business—although not enough to absorb, as is now the practice, the losses resulting from other phases of Post Office operations.

Effect on Rail Revenues—Based on the 1944 volume of air mail and the volume moved for given distances, the study reached the conclusion that, if all long-haul first class mail, including franked and "penalty" (that is, government) mail, were transported by air, the mail revenues of the railroads would be reduced to about $107 million, a loss to them of some $22 million. At the same time the revenues of the air carriers at present rates would be raised to about $109 million, an increase of some $81 million.

"The estimated increased cost of handling first class mail by air would equal about $37,750,000 for transportation only," said Mr. Sullivan's report, "and the increased cost of transporting all long-haul franked and penalty letter mails would amount to about $26,480,000. Therefore, the total increase in transportation costs only would amount to approximately $64,230,000."

The above-stated $22 million loss to the railroads, however, according to the report, "is based on mathematical computations only, and the assumption that the railway post office cars and space used for the transportation of the mails could be reduced in proportion to the decreased quantity of mail transported by the railroads.

"Actually it is doubted that the revenues of the railroads would be reduced as much as shown but a basis for establishing more definite data is not available. There are but a few R.P.O. trains scheduled to distribute long-haul mail only, and generally the distribution in R.P.O. cars comprises the distribution of short-haul as well as long-haul letter mail. Also, in most instances, mail of other classes, primarily newspapers, is distributed in said R.P.O. cars. As such, it may not be practicable to reduce the size of the distributing units in proportion to the reduction in mail, even though such distributing units would not be fully utilized with the long-haul mail going by air. Therefore, unless a smaller R.P.O. unit would suffice, the cost to the department and revenues of the railroads involved would not be reduced.

Rail Mail Costs Might Rise—"The probable effect on the railroads if all long-haul letter mail were transported by air is that the size of the distributing units might be reduced on a number of trains and that the R.P.O. cars on trains performing the distribution of long-haul mail only might be discontinued entirely. Therefore, as a guess only, it is estimated that the railroads would not lose more than $12,000,000 to $15,000,000 instead of the $22,000,000 shown. This also would have the effect of increasing the costs to the department to the extent of the difference between $12,000,000 to $15,000,000 and the $22,000,000 based on mathematical computations only."

Mr. Sullivan concedes, however, that there is no immediate prospect of shifting

(*Continued on page 654*)

Court Receives Evidence in Georgia vs. P. R. R.

The evidence on which the state of Georgia bases its anti-trust suit against the Pennsylvania and other railroads, alleging conspiracy to fix freight rates that discriminate against that state and its citizens, was presented at Washington, D. C., March 18 to Lloyd G. Garrison, special master named by the Supreme Court of the United States to hear the case and make recommendations as to its disposition. Aside from brief statements by counsel, the material was presented in the form of briefs and supporting documents.

While 20 individual railroads are named as defendants in the suit, the state has asserted that their rate-making conferences, by which joint rates are proposed for Interstate Commerce Commission approval, are the instruments by which the carriers' allegedly illegal actions are accomplished, and that these conferences amount to a cartelized arrangement deriving its ultimate power from the Association of American Railroads. Much of the evidence which the state offered the court, therefore, was designed to lend weight to charges aimed at the association and the rate bureaus.

Upon presentation of this material, the hearing before the special master was recessed to June 4, when the defendants will give their views and supporting testimony at New York. The state's allegations were summarized in *Railway Age* of August 18, 1945, page 310, while the railroads' replies were outlined in the October 6 issue, page 576.

Revenue per Employee Much Lower Than '43

So I. C. C. bureau shows in a study of recent wages and earnings trends

Although the total operating revenues of Class I railroads reached an all-time peak in 1944, the average revenues produced both per employee and per dollar of wages were lower in that year than in 1943, regardless of the inclusion or exclusion of overtime, and in 1945 both were "much lower" than in either of the two preceding years, the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission has pointed out in the latest issue of its "Monthly Comment." Moreover, it added, the average revenue per dollar of total wages in 1945 was only 2 cents more than in 1941.

From 1943 to 1945 the revenue produced per dollar of total compensation fell off by more than 10 per cent. After exclusion of overtime it fell off more than 8.5 per cent. These results reflected an increase in total employee compensation in 1945 to an all-time high, $3,860 million, in the face of a drop in total operating revenues of 5.7 per cent below 1944. In comparison with 1940, revenues in 1945 rose 107 per cent, total compensation rose 96 per cent, and overtime payments increased about 589 per cent, the bureau pointed out.

Revenue Per Employee—A tabulation of the operating revenue per employee for the past six years disclosed the following figures: 1940, $4,184; 1941, $4,691; 1942, $5,874; 1943, $6,682; 1944, $6,675; and 1945, $6,268. A tabulation of operating revenue per dollar of wages (total compensation, including overtime) for the same period showed results as follows: 1940, $2.19; 1941, $2.29; 1942, $2.55; 1943, $2.57; 1944, $2.45; and 1945, $2.31.

The "Comment" also included a brief comparison of railway fuel costs in 1945 as compared to the essentially pre-war year 1941, showing that the average cost per net ton of coal purchased at the mines increased in the four years by 37.6 per cent; of fuel oil, 20.0 per cent; of gasoline, 18.2 per cent; of Diesel fuel, 15.0 per cent; and of electric current, 6.1 per cent. In the same period, however, expenditures for coal increased less, percentage-wise, than expenditures for all fuels, the ratio being 68.79 for 1941 and 66.83 for 1945. On the other hand, Diesel fuel costs, which were 1.64 per cent of all fuel costs in 1941, had increased to 4.37 per cent of the total in 1945.

Continuing its analysis of the income and balance sheet position of Class I roads at the year end, begun in the February "Comment" (reported in *Railway Age* of February 23, page 415), the bureau called attention to the fact that in 1945 the ratio of income available for fixed charges to fixed charges dropped "sharply" from the hands of the courts, the respective ratios previous year's figure, for roads in the being 0.94 as against 1.6. For roads not

in receivership or trusteeship the ratios were 2.23 for 1945 as compared to 2.43 for the previous year.

Working Capital Position—At the end of 1945 the net working capital position of the 24 Class I roads then undergoing reorganization was $447.1 million, an increase of 17.3 per cent over the $381.1 million reported a year earlier. For the same roads and the same period, current assets dropped 5.5 per cent, current liabilities dropped 24.9 per cent, and taxes accrued dropped 41.7 per cent. However, the report added, the same roads at the end of 1944 reported $556 million of debt in default as to principal and $872 million of interest in default. (The comparable 1945 figures were not available.)

A similar examination of the position of Class I roads not in the hands of the courts indicated a "rather striking increase," from 1.54 at the close of 1944 to 2.01 at the end of 1945, in the ratio of assets to liabilities, a reflection largely of a reduction of $834 million in taxes accrued.

In its regular survey of operating results, the bureau noted that January freight revenues (daily basis) were 9.3 per cent above December, 1945, but 18.8 per cent under January, 1945. The freight revenue index (based on the 1935-1939 monthly average as 100) for January was 168.9, as compared to 154.4 for December and 208.2 for January, 1945. The passenger index, similarly computed, was 392.9 for January, compared to 460.1 for December, 1945, to 397.6 for January, 1945, and to 400.0 for January, 1944. Passenger revenue was 14.6 per cent less, on a daily basis, in January than in the month before, and 1.2 per cent less than in January, 1945.

Carloadings—February carloading totals on an average weekly basis, for all commodities, were 6.1 per cent under the corresponding 1945 period, but revenue freight traffic in December, 1945, showed a decline of 10.5 per cent in the number of tons carried and of 19.1 per cent in the number of ton-miles, as compared with the same month of 1944, the report pointed out. The rate of decline in tons of freight carried in December was slightly less than in November, but the decline in ton-miles was considerably greater. In December, 1945, as compared with the same month of the previous year, the number of passengers carried decreased 0.3 per cent, but the number of passenger-miles increased 8.4 per cent.

Turning to the outlook for the near future, the bureau noted that the grain situation is so uncertain that the Production and Marketing Administration of the Department of Agriculture has made no movement forecast, but instead has issued only an estimate of average weekly requirements for cars for loading grain and products for the next few months, assuming the effectiveness of orders giving preference to movement of these commodities to the ports for export, and of the Department of Agriculture's program for stimulating the release of grain by farmers and country elevators.

On that basis, March requirements of grain cars are put as 60,000 weekly, which, the bureau observed, is "substantially higher than February performance levels, and also 37.2 per cent above movement in March, 1945." The April estimate is 58,000 cars per week, 8,000 above last year's record, that for May is 54,700 cars a week (4.8 per cent over 1945), and that for June is 57,200, or 2,400 cars per week over last June's actual loadings. The same source has estimated refrigerator car requirements for March as 188,400 cars, an increase of 6.7 per cent over last March's loadings, with most of the increase expected in fresh fruits and vegetables. The March figure is 8.2 per cent above February's, and well above that expected for April and May. Loadings of livestock are expected by the administration to average 17,600 cars per week in March, or 22.6 per cent higher than last year. April and May loadings are estimated as 18,250 and 17,950 cars weekly, respectively.

Passenger-Revenue Unit Comparisons—Another subject of study in the current "Comment" is a comparison for the 10 years ended with 1944 of data on passenger-carrying car-mile revenue, stated for transportation revenue only, on the basis of movement of loaded and empty cars, but not including club, observation, or dining cars unless space is sold therein. The revenue per coach-mile was 28.3 cents in 1936 and 68.6 cents in 1944, an increase of 142 per cent, while during the same period the revenue per passenger-mile increased only 2 per cent, reflecting a corresponding increase in passengers per coach of 137 per cent, that is, from 17.5 to 41.5. In the same period the coach-mile revenue in the Eastern district increased 86 per cent, while the increase in the South was 231 per cent and in the West, 224 per cent, with the latter results showing the effect of increases in both revenue per passenger-mile and in passenger-miles per coach-mile.

"While the revenue per coach-mile in the Eastern district in 1936 was over 70 per cent more than what it was in the South and West," the bureau observed, "it was actually less in 1944 than in the South and very little more than in the West. The revenue per passenger-mile in the South in 1944 was 1.74 cents as compared with 1.68 cents in the East, while the passenger-miles per coach-mile in the West in 1944 was 42.6 as compared with 40.9 in the East. The coach fare load in the East is depressed somewhat by the inclusion of a greater proportion of commutation traffic than in the South and West, although it is still above the average for the United States."

Revenue per sleeping and parlor car-mile (excluding charges for space) rose from 21.4 cents in 1936 to 49.9 cents in 1944, or 133 per cent (as compared to 142 per cent for coaches), the "Comment" showed. Passengers per car increased from 9.4 to 20.5, or 118 per cent (as compared to 137 per cent for coaches). The Southern district showed the greatest improvement in revenue per sleeping and parlor car-mile, 200 per cent, as compared with 107 per cent in the East and 156 per cent in the West.

Available data for the first 9 months of 1945, however, showed a decline for the whole country in average revenue per coach-mile of 3.9 cents, and a decline per sleeping and parlor car-mile of 1.9 cents, both reflecting a smaller load per car, the bureau noted. All comparisons of car-mile revenues, it went on to say, should be viewed in the light of fluctuations that have occurred in the 10-year period under study in the level of fares, as well as of changes in load per car.

Money Provided for Lea's Investigation

The House on March 18 authorized the expenditure from its contingent fund of $35,000 for expenses necessary to the conduct of the general investigation of the transportation situation undertaken by its committee on interstate and foreign commerce, thus making effective the authorization of that investigation previously enacted, as noted in *Railway Age* of March 16, page 586. The funds were provided through House Resolution 563, reported by Representative Cochran, Democrat of Missouri, chairman of the committee on accounts, who explained that the committee had decided that sum would be sufficient, since the report had to be made during the present Congress, although a request had been made for $50,000.

Car Service Orders

At the request of the Department of Agriculture and the Office of Defense Transportation, the Interstate Commerce Commission has issued Service Order No. 474, effective March 20 through May 15, providing that railroads operating in Maine shall give priority over all other orders for refrigerator cars to those for the loading of certified seed potatoes, up to the daily loading ability of individual shippers. Reconsignment or diversion of such shipments also was prohibited.

To secure more nearly maximum use of the available supply of box cars, the Car Service Division of the Association of American Railroads has instructed roads in the West, effective March 25 until further notice, not to deliver in home route to Eastern, Southern, Allegheny or Pocahontas connections, any serviceable empty plain box car (XM classification) of United States ownership.

Lack of Grain Not Due to Car Shortage, Says O. D. T.

Appearing March 15 before a hearing conducted by the special House committee investigating food shortages, Al S. Johnson, assistant director, railway transport department, Office of Defense Transportation, emphatically denied that any shortage of grain and grain products in meeting overseas relief requirements has been due to failure of transportation.

Mr. Johnson pointed out that in spite of the shortage of rail equipment, particularly box cars, the nation's railroads are currently hauling record shipments of grain and grain products. He said that last year's total loadings of grain, constituting a larger proportion of total loadings than ever before in railroad history, showed an increase of 86,000 carloads above the previous record year of 1943, and that the January and February, 1946, loadings have surpassed the mark set during the same months in 1945.

"Despite fewer boxcars," he added, "average grain loadings during the first eight

weeks of 1946 have kept pace with the 1945 figures and are at present 8.6 per cent of total freight loadings." He said that at the beginning of this year railroads had 24,367 fewer serviceable box cars than in 1943 and 279,125 fewer than at the conclusion of World War I.

Mr. Johnson also denied statements attributed to other witnesses that "thousands" of grain elevators remain blocked. He said that the 848 blocked elevators reported on January 25 had been emptied by March 13, leaving none in that condition. Priorities must be used sparingly, he warned the committee, lest the country's transportation system be completely wrecked.

Favors Barge Line Differential Rates

(*Continued from page 650*)

the railroads assert that the barge lines, already having the advantage of free waterways, should not be given the further advantage of rate differentials, "public aids," he declared, "have generally been regarded as an argument in favor of differential rates rather than otherwise."

One argument advanced during the earlier stages of this proceeding to support the theory that barge transportation should be developed—namely, that the railroads had about reached the limit of their capacity—has been rather thoroughly disposed of during the recent war, the report noted. The chief interest in water transportation among Mississippi valley shippers, therefore, it continued, is not so much in additional facilities as in lower transportation charges. "On the whole there is no reason to disbelieve the testimony of numerous witnesses for shippers who stated that their only object in shipping by barge was to save transportation costs," the examiner observed, adding that the record supports the conclusion that most of the barge was due to rates lower than rail rates, even though "from the standpoint of service barge transportation is inferior to all-rail."

Mr. Hosmer's conclusion with respect to the interest of shippers in the encouragement of barge operation was as follows: "It seems likely that the shippers in the Mississippi valley will continue to regard the barge lines as having little or no value to them except as competing carriers whose effectiveness depends on their maintaining lower rates than those which the railroads are able or willing to establish. Most of the shipper witnesses freely conceded a public need for efficient railroad services but refused to sympathize with the expressed fears of the railroads that their ability to supply such service might be impaired by the substitution of barge-rail for all-rail transportation."

Congressional Mandate—As to congressional policy, the examiner observed that "there can be no question that the commercial interests of the Mississippi valley have exercised a potent influence on congressional legislative policy with respect to water transportation." One consequence is that part of section 307(d) which "lays a mandatory duty on the commission to establish joint water-rail rates lower than corresponding all-rail rates when it finds such differences 'to be justified.'"

On the "administrative question" of justification thus raised, the railroads contended that "the clearest and most convincing proof" of lower costs for barge operation was required. Some of the barge lines, abandoning the argument that water operation is cheaper, insisted that a rail line could not refuse to participate in a joint differential rate with a barge line if the railroad's division equals that received in an all-rail joint rate. While the examiner did not see that this principle was involved, he took the position that there is nothing in the wording of section 307(d) nor in its legislative history to support a view that differentials can be found justified only on a showing of a lower cost of operation by water.

"The argument of the railroads based on costs derives a certain dramatic force," he commented, "from the fact that in the past the barge lines and their supporters have strongly asserted their ability to perform transportation at costs lower than those of the railroads without support of ascertainable facts."

Basis of Barge Rates—On the other hand, continued Mr. Hosmer, barge rates always have rested mainly on a comparison of value rather than of cost of service. "When the barge line 'bears the burden of the differential,' it receives a smaller amount of revenue for its share of the joint service than a competing rail carrier obtains for rail transportation. As a component of the competitive system of transportation which prevails in this country it may legitimately do this if it feels compelled to accept such a burden because of the inferior value of its service." However, "if it performed service at less than cost, it would be guilty of an unfair and destructive competitive practice which might call for the exercise of the commission's restraining powers."

From such premises it was argued that joint rates should be prescribed to provide a return on the investment in the facilities by which the services are rendered, such cost, the examiner commented, to be the fully allocated and not merely the out-of-pocket expense. Railroad class rates, he held, are on a sufficiently high level in most instances to justify differentials on that theory, though this may not be true as to commodity rates. On that conclusion he proceeded to recommend a joint rail-barge class rate structure. He made no proposals with respect to commodity rates, considering it preferable to leave that situation "flexible." Neither a controlling formula nor a distance scale basis for joint class rates is feasible, he said, leaving the only alternative the prescription of individual rates. These he suggested for a "considerable number" of key points, from which beginning he believed the carriers would have little difficulty in working out differentials for other points.

Examples of the differentials proposed, in cents per 100 lb., are as follows: New Orleans to Detroit, Mich., Cleveland, Ohio, and Charleston, W. Va., via Cincinnati, Ohio, and to Chicago and Milwaukee, Wis., via Peoria, Ill., 46 cents. To Chicago and Milwaukee via St. Louis, Mo., 42 cents. Memphis, Tenn., to the same points as named above via Cincinnati and via St. Louis, 29 cents, and via Peoria, 35 cents. Chicago to Denver, Colo., via Kansas City, Mo., 23 cents. Chicago to San Antonio, Tex., via Vicksburg, Miss., 41 cents. Chicago to Houston, Tex., via New Orleans, 46 cents.

Depreciation Study Compiled by I. C. C. Valuation Bureau

The Bureau of Valuation of the Interstate Commerce Commission has made public a document of 118 sheets entitled "Depreciation Studies on Certain Items of Depreciable Roadway Property and Equipment," prepared by its engineering section, in which are presented charts and accompanying tables and text developed to meet increased demands for speeding the determination of the amount of depreciation existing in railroad properties, and to expedite the development of depreciation rates and past accrued depreciation reserves for accounting purposes. The study was presented as information without having been passed on by the commission.

The data analyzed in the study covered units of property the current costs of which total about $1,200,000,000, about evenly divided between roadway and equipment, it was explained, and the conclusions set forth were based on several years of investigation of such property and equipment items as steel and timber bridges, stone masonry, concrete, rail, brick and frame buildings, track scales, water tanks, wells, turntables, signals, shop machinery, locomotives and freight-train cars.

The statistical material and charts are grouped in the publication in four parts. The first constitutes a historical development of average service lives for the major items of roadway and equipment property, consisting of retirement curves based on mortality statistics. These average guide service life charts are for use in depreciation accounting, while the varying rates which result from the use of the curves at any attained age are for use for valuation purposes.

The second section sets forth "condition per cent" charts and tables which result from the service life data in the first part. The data are for use in depreciating for valuation purposes and the development of the depreciation accounting reserve, but not for depreciation accounting purposes. The third part provides a shortened valuation procedure to determine the amount of depreciation when projecting last valuation to currency, while the final section consists of charts and tables for use in determining the proper depreciation accounting reserve.

The study was accompanied by 18 "conclusions." Among others, the bureau pointed out that where service lives are the same, conditions per cent at various ages are approximately the same regardless of the character of the property. For valuation purposes the service life used and the resulting condition per cent should be a function of the attained age. Data for long-lived fixed property on individual roads are inadequate. Retirement curves on all major items of property are similar, and approximately only 50 per cent of the property has been retired when the average service life has been reached.

Noting that there will always be criticism of depreciation studies because they

represent the experience of the past and are not necessarily an indication of the future, the bureau observed that there is a minimum of conjecture involved when curves constructed on the basis of past experience are modified as future experience requires, and a basis for justifying such changes has been developed. It was pointed out also that the depreciation computations used in the study were unadjusted for intensity of use, since most property items considered were not greatly affected thereby, and adjustments have not been made in service life data for accelerated or decelerated depreciation.

Senate Committee Takes Up Bulwinkle Bill

Testimony favoring passage of the Bulwinkle bill, which would stay operation of anti-trust laws with respect to carrier rate-making procedures and other joint actions approved by the Interstate Commerce Commission, was presented to the Senate committee on interstate commerce in hearings which opened in Washington, D. C., on March 20. The hearings are expected to continue at least through March 29, at which time Governor Arnall of Georgia and Commissioner Aitchison of the I. C. C. are tentatively scheduled to appear.

The bill, H.R. 2536, was passed by the House on December 10, 1945, after extensive hearings before the House committee on interstate and foreign commerce, currently reported in these pages. Introduced by Representative Bulwinkle, Democrat of North Carolina, it has been heartily indorsed by the I. C. C., Office of Defense Transporation, the National Industrial Traffic League, the National Association of Shippers Advisory Boards, the United States Chamber of Commerce and other transporation organizations subject to the Interstate Commerce Act.

Fletcher Opens for Proponents—Heading the witnesses who appeared at the March 20 morning session were R. V. Fletcher, vice-president of the Association of American Railroads. Following and supporting him were George E. Mace, manager, Transportation Bureau, Commerce and Industry Association of New York; Frederick G. Hamley, general solicitor, National Association of Railroad and Utilities Commissioners, Washington, D. C.; and Samuel H. Williams, manager, Transportation and Foreign Trade Bureau, Chamber of Commerce and Board of Trade, Philadelphia, Pa.

Judge Fletcher, who is expected to appear again during the hearing, stressed that "railroad business cannot possibly be carried on without conferences in regard to rates."

"This fact has been recognized from the first by shippers and regulating authorities," he said, "and the I. C. C. has repeatedly indorsed the view that some discussion must be had among railroads to preserve order in the transporation field."

Mr. Fletcher explained that railroads must confer with all connections and before proposing a rate must make sure that it will not cause them to discriminate unlawfully against another person or locality. "It would seem desirable," he added, "that the railroads should meet and talk things over to make sure that a proposed rate is lawful and call into the conference interested shippers in order to obtain their point of view so that violations of the Interstate Commerce Act will not follow a proposal to initiate a particular rate."

Long-Standing Practices — Mr. Fletcher told the committee that rate conferences have been carried on for the past 50 years and that they have proven satisfactory to the shipping public, the I. C. C. and the state regulating authorities.

Commenting on the Department of Justice's challenge of the railroads' long-accepted right to confer, Mr. Fletcher declared that "it has been considered by the transportation agencies, by their patrons and by the regulating authorities that in some administrative body there should be lodged the authority to say just what agencies may be created, how they should be managed and how far they can go in giving consideration to rates." "The Bulwinkle bill," he stressed, "would give the commission the authority to regulate agreements among carriers so that the carriers may know just how they can safely proceed without fear of violating the law."

The witness said that the carriers subject to the Interstate Commerce Act are simply asking that they be granted the same privileges which have been given to water carriers in foreign commerce and air carriers and that "their request is sanctioned by every principle of justice and by the overwhelming opinion of those who use transportation and those who have a study of its incidents."

In reply to queries from Senator Wheeler of Montana, committee chairman, and Senator Reed of Kansas pertaining to the present anti-trust suits against the railroads in Lincoln, Neb., and before the Supreme Court, instituted by the Department of Justice and the State of Georgia, respectively, Mr. Fletcher said that to a certain extent one case "overlaps" the other. He did not expect a decision in either before next fall.

No Substitute Suggested—Mr. Mace said that he had been identified with the making of freight rates for over 35 years and that "no other method of arriving at rates has been suggested that holds more promise of meeting the needs of the shipping public as does the present method of joint conferences."

In naming the members of his organization that favor the bill, Mr. Hamley pointed out that the Southeastern Association of Railroad and Utilities Commissioners also approves it. He disclosed that a poll of the ten southeastern state commissions revealed that seven approved the bill and that three, Alabama, Georgia and Tennessee, took no position on it. (Walter R. McDonald, of the Georgia Public Service Commission, is president of the national association.)

Mr. Williams stated that if the bill is not passed and the present rate-making procedure of the carriers is discontinued, the following would be among the detrimental effects: (1) Rate structures resulting in widespread discriminations among shippers and communities; (2) competitive carriers would give preference to large shippers, resulting in rate discriminations against the small shipper; (3) competitive rate relationships between communities would be broken down to the detriment of the small community in particular; and (4) unrestricted competition and rate-cutting would demoralize our transportation system to the detriment of all business enterprise.

Says More Air Mail Would Be Expensive

(*Continued from page 651*)

all long-haul first class mail to air transportation. "Neither the department nor the air carriers are presently equipped to handle the volume of non-local first class and air mail combined by air. The carriers do not have sufficient aircraft, and the air transportation industry is presently not capable of performing service in all kinds of weather, with the degree of regularity in performance of schedules required by the department to render efficient service. The department does not have adequate facilities at airports for handling such volumes of mail, nor is a system perfected for efficient handling of the mail if transported by air instead of by surface means as at present."

Meanwhile, the report suggests that "air mail transportation rates must be stabilized and further reduced. Until the postal service knows definitely the rates upon which it can depend, any major program is shrouded in uncertainty. Also, until a lower rate is established approximating the 32 cents per ton-mile proposed in the show cause orders of the Civil Aeronautics Board, dated December 22, 1944, or even lower rates based on the costs of performing the service required by any particular kind of air traffic, the volume of mail that can be provided by the Post Office Department in furtherance of air line expansion will be restricted to the limitations of its revenues."

Air Parcel Post Suggested—In addition to the proposal to reduce air mail postage to 5 cents per ounce, the report suggested legislation to establish an air parcel post service with costs to be fixed on the basis of the study. It was noted, however, that while these costs are thought by their sponsors to be adequate for the purpose of fixing rates, little or no profit would result. The question whether or not such a service should be "merely self-sustaining" or should yield a profit is one of policy that would have to be decided first, it said.

Also, the report proposed that a bill be introduced to authorize the department to lease quarters at airports for the distribution of mails. "The policy of requiring the air carriers to provide the facilities presently used has not been satisfactory and the facilities provided have not been adequate with few exceptions. Also, the facilities provided are generally not adapted for efficient and expeditious handling of the mails, such quarters having been constructed for other purposes originally."

Even though the cost of a much expanded air mail service is beyond the present means of the Post Office, the report indicated, it argued that the interest of "high public policy" may "completely transcend the mat-

ter of costs" when establishing a long-range program. It added that the department's traditional policy has been "to develop and support all practical advancements in transportation," and to advance the interests of the public through a "more expeditious and efficient postal service." Moreover, it pointed out, "support would be given to the aircraft indutsry, now facing the serious problems of reconversion. Maintenance of a large force of trained pilots and ground personnel, as well as support for the industry in the task of building and equipping aircraft with all developments of the war period applicable to civilian operations, is the best insurance of preparedness in national defense. Further, if the national defense can be aided by self-sustaining civilian instrumentalities, the burden of public cost would be reduced sharply.

Restates Limits on Rail-Owned Trucking

(*Continued from page 650*)

report leaves no doubt that this restriction is intended to deprive Transit of the right to engage in operations unconnected with the rail service, of the right to be a party to tariffs containing all-motor or joint rates, and of the right to transport freight at other than the rail rates of its parent."

Rulings in two leading cases of long standing were cited by the majority in support of its conclusion. One, the so-called *Barker case,* it said, first established the principle that, except under special conditions, acquisition of a truck line by a railroad should be approved on the condition that no service should be given to or from, nor any traffic interchanged at, any point not a station on the line of the acquiring road. Some 40 cases were decided on that precedent before 1940, and all except three also included a reservation of authority to impose such further restrictions as might be necessary to limit operations to those connected with train service, the majority stated.

Majority Reviews Precedents — Where certificates of convenience and necessity are granted truck lines affiliated with railroads under section 207 provisions, the leading case, the majority noted, has been the *Kansas City Southern case,* decided in 1938 and "followed consistently" until after the passage of the Transportation Act of 1940. More than a score of railroad applications were disposed of under that precedent, it observed, and substantially identical restrictions on truck operations, prohibiting service not connected with rail operations, were imposed in all instances.

Since 1939, however, and beginning with the so-called *Reddish case,* where a Frisco affiliate acquired a truck operator, "the practice of specifically reserving the right later to impose such restrictions as might be necessary to insure that future operations under the acquired authority should be limited to the rendition of service auxiliary to, or supplemental of, train service was not followed. With such departure from the former practice there also appears to have developed a tendency in rail-motor acquisition proceedings to treat the *Barker case* restrictions as geographical or territorial only in their intent, rather than as substantive limitations on the character of the *service* which might be rendered by a railroad or its affiliate." The majority asserted, however, that "despite whatever color of support may be found" for this tendency, "we are convinced that there was no such intent and that the reports should not be so construed or applied."

Continuing, it said: "From a regulatory standpoint, motor carrier operations conducted by a railroad affiliate should be the same whether the authority under which they are conducted was acquired by an application under section 207 or by purchase. There is no justification whatever for rigidly restricting, as we have done since the original decision in the *Kansas City Southern case,* railroad-controlled motor carrier operations conducted under authority acquired under section 207 and at the same time allowing operation under purchased authority wholly free from all restrictions except territorial or geographical limits. Such, however, would be the illogical result of construing the *Barker case* restrictions as territorial limitations only."

Cites National Policy—The majority's conclusion is set forth as follows: "It is our opinion, originally indicated in the *Kansas City Southern case* and confirmed by nearly a decade of experience in motor carrier regulation, that the preservation of the inherent advantages of motor carrier service and of healthy competition between railroads and motor carriers and the promotion of economical and efficient transportation service by all modes of transportation and of sound conditions in the transportation and among the several carriers, in short the accomplishment of the purposes forming the national transportation policy, require that, except where unusual circumstances prevail, every grant to a railroad or to a railroad affiliate of authority to operate as a common carrier by motor vehicle or to acquire such authority by purchase or otherwise should be so conditioned as definitely to limit the future service by motor vehicle to that which is auxiliary to, or supplemental of, train service."

Applying this principle, the majority proceeded in the present report to find that Transit's operations should now be so restricted, although they were not when the certificates were issued. It was this action which Commissioner Miller held, in his dissent, "is arbitrary, is wholly unsupported by anything in these records, is without knowledge of the remaining available service, and is unfair to the carrier which invested its funds in these properties pursuant to our prior approval of its unrestricted operations under the rights acquired.

"The justification given by the majority," he went on to say, "is not convincing." The only conditions imposed in the *Barker case,* in his opinion, were two that cancelled rights to operate in territory outside that served by the railroad. Such conditions, he insisted, "had nothing to do with the *kind of service* to be rendered," and the purchaser in that case since "presumably has conducted an unrestricted all-motor service as authorized by that certificate." Contrary to the majority view, he went on, the decision in the *Reddish case* is "wholly in line with the report in the *Barker case.* In both cases the only conditions imposed with respect to the rights were geographical. . . .

Reports Should Be Reliable—"The carriers," Commissioner Miller said, "and the public generally should not be forced to read into our reports intentions which are not clearly stated therein, or to anticipate that, years after we have given our approval without stating what we mean, we then, on our own motion, and without a hearing, cancel certain of the rights previously authorized to be acquired—on the ground that such was our intention when we first granted the authority."

The dissenting commissioner did not take the position, however, that railroad-affiliated truck lines should be authorized in the future to engage in unrestricted all-motor operations unconnected with the train service of the parent. He suggested, and in this respect the other dissenting commissioners did not agree with him, that "the imposition of a condition precedent which would require the motor carrier subsidiary to engage only in the transportation of freight from or to stations on the line of the parent railroad, at rail rates and on rail billing, generally would suffice for this purpose." However, he said in conclusion, "no such condtion was imposed in these proceedings and we should not now, long after exercise of the authority previously granted, arbitrarily cancel certain of the operating rights permitted to be acquired, on the theory that we intended to do it at the time we approved the transactions."

A more desirable restriction, Commissioners Porter and Mahaffie proposed, would be a limitation of service to rail points or points within a reasonable distance of those served by railroad. When there is a difference between truck rates and rail rates, they contended, Commissioner Miller's proposal would tend to "aggravate differences between those motor carriers which are subsidiaries of railroads and those which are not."

Seaboard Cites Cost of Block Signal Installation

The Seaboard Air Line, replying this week to a "show cause" order, has informed the Interstate Commerce Commission that installation of a block signal system covering 1,373.8 miles of its line where 50 m.p.h. is authorized would cost at least $10,000,000.

In addition to pointing out the shortage of materials and lack of trained personnel, the Seaboard declared that its safety record is not unfavorable, compared to that of railroads as a whole, and suggested that the I. C. C., should it order any signals installed, take into consideration the line's financial resources. It suggested that if a signal installation is prescribed, it should be first applied on the lines from Hamlet, N. C., to Savannah, Ga., via Columbia, S. C.; from Coleman, Fla., to Miami, and from Coleman to Valrico, which aggregate more than 40 per cent of the mileage covered by the show cause order.

As reported in *Railway Age,* February 9, page 334, the I. C. C. had served on the Seaboard an order to show cause why that road should not be required, on all its lines

where a speed of 50 m.p.h. or more is authorized, either to revise existing block signal systems or install a block signal system in conformity with I. C. C. standards. The order resulted from the commission's investigation of a collision at Kollocks, S. C., on December 16, 1945.

Suspension of Lower Auto Rates in East Upheld by I. C. C.

The Interstate Commerce Commission has denied petitions of certain railroads in Official territory and of certain automobile manufacturers for a vacation of Division 2's order suspending tariff schedules intended to establish an exception rating on new automobiles in interstate commerce lower than the maximum prescribed by the commission in its No. 28190 proceedings. The basic contentions advanced in the petitions were summarized in *Railway Age* of February 23, page 417. The suspension, effective until August 24, was ordered in I. & S. No. 5384 on complaint of the American Trucking Associations, and prevents the maintenance on the roads concerned of the rating of 75 per cent of first class which prevailed before the commission substituted an 85 per cent rating in the general proceeding.

Supply Trade

Frank C. Cheston has organized the **Frank C. Cheston Company,** with headquarters at 38 Park Row, New York, to

Frank C. Cheston

manufacture and sell electric rivet and metal heaters, with which products he has been associated for the past 26 years.

The **Safety Car Heating & Lighting Co.** has reported a profit of $526,254 for the year 1945, after providing a reserve of $50,000 for contingencies and after charges for inventory obsolescence, depreciation on fixed assets, and reserve for income and excess profits taxes. This compared with a profit of $546,146 for 1944. In the annual report, W. L. Conwell, president, stated that the company had a very substantial backlog of orders at the end of the year and that the volume of orders since that time has been satisfactory. As the machinery and equipment used for war production was the same as required for the manufacture of regular products, the company was able to resume peace-time production shortly after the cancellation of its war contracts.

Frank P. Hickey, formerly with the Pantasote Company, has joined **Waterhouse & Co.** of New York . He will represent the company in the metropolitan

Frank P. Hickey

division. Mr. Hickey was graduated from Fordham University. He joined Pantasote in 1939. He enlisted in the United States Coast Guard in 1942 and served 43 months in uniform, 19 of which were overseas.

John T. Landreth, vice-president of the **Spring Packing Corporation,** Chicago, has been elected president of the company, succeeding **John P. Landreth,** whose death on February 27, was reported in the *Railway Age* of March 9. **Stephen A. Mitchell,** general counsel of the firm, has been elected also a member of the board of directors, filling the vacancy left by the death of John P. Landreth.

F. B. Hornibrook has been appointed assistant director of research of the **Master Builders Company,** Cleveland, Ohio. Mr. Hornibrook has been on the staff of the National Bureau of Standards since 1930

F. B. Hornibrook

and served as assistant to the section chief of the cement and concreting materials section for the past five years. He also has served such government agencies as the repairs and utilities branch of the U. S. Engineers and the Maritime Commission on consulting assignments. He is a member of American Concrete Institute, serving as chairman, committee 212, "Admixtures for Concrete"; a member of the American Society for Testing Materials; and an associate member of the Highway Research Board, serving as chairman of their committee on dynamic tests of concrete.

P. J. Patton, Jr., has been appointed regional manager of the industrial division of the **Ransome Machinery Company,** Dunellen, N. J., a subsidiary of the Worthington Pump & Machinery Corp., with offices in Chicago. He is in charge of sales in the middle western area. Mr. Patton formerly was eastern area manager of the welding equipment division of the A. O. Smith Corporation, Milwaukee, Wis.

The **H. K. Porter Company** of Pittsburgh, Pa., has announced the completion of arrangements to sell the fixed assets of its freight car manufacturing plant at Mt. Vernon, Ill., to the **Pressed Steel Car Company.** The Porter Company announced that the sale was in accordance with its policy to further develop its railway specialties business, inaugurated in December, 1945, with the acquisition of the Fort Pitt Spring Company of McKees Rocks, Pa. Porter has entered into a contract to supply Pressed Steel Car Company plants with certain specialties for a period of ten years.

Kenneth F. Park, sales development manager of the **Caterpillar Tractor Company,** has been promoted to engineer-

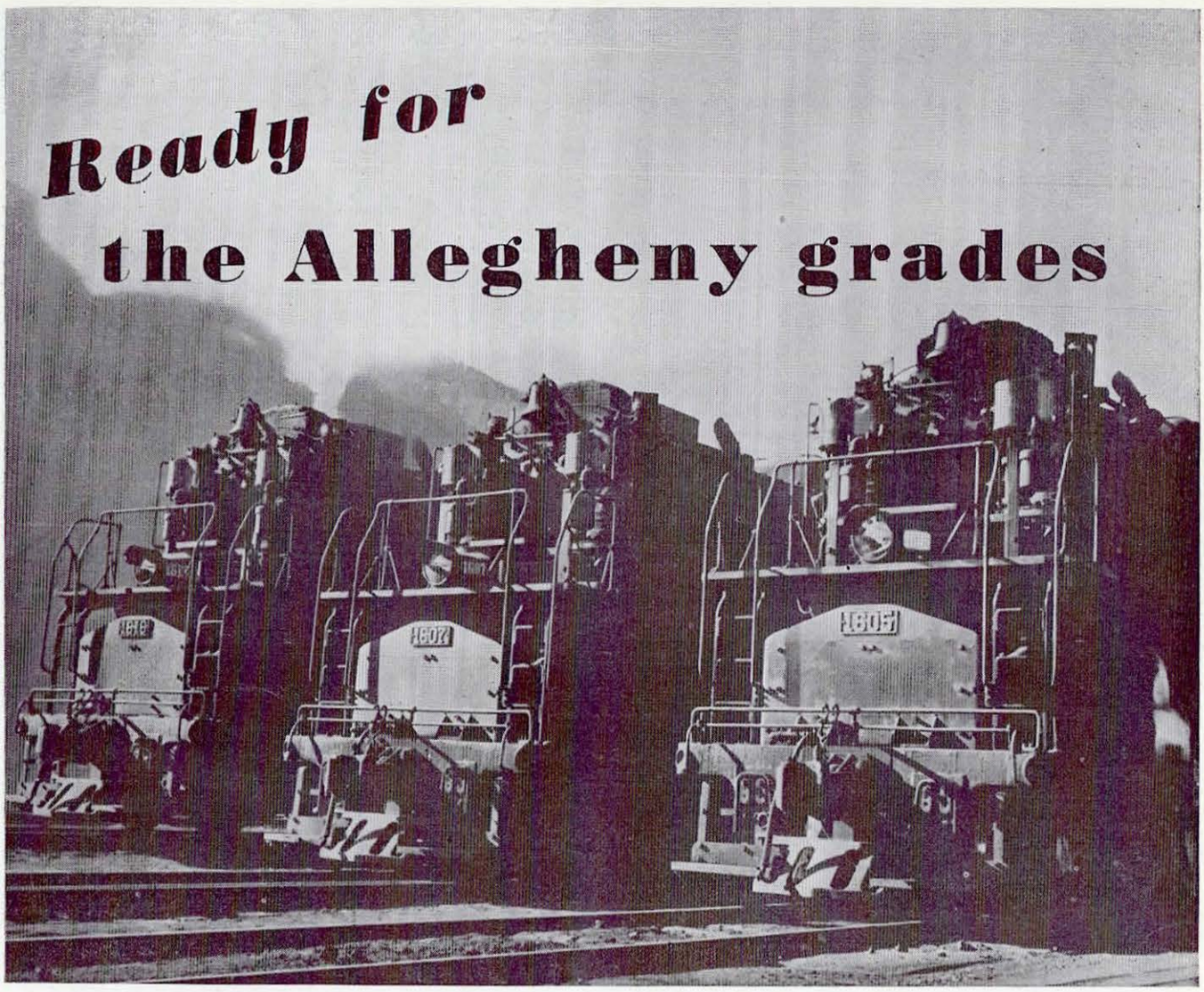
Kenneth F. Park

ing consultant on all matters pertaining to the earth-moving field, a newly-created position. In his new capacity Mr. Park will serve the three sales divisions of the company which cover the entire United States and Canada. Mr. Park's new appointment and an outline of his career originally were reported in the *Railway Age* of March 16, page 592.

Roland C. Disney has been appointed manager of the eastern district of the **Baldwin Locomotive Works,** with headquarters in Philadelphia, Pa. Mr. Disney recently was relieved from army duty with the rank of lieutenant colonel. He was graduated from Baltimore Polytechnic and

News Department continued on next left-hand page

Ready for the Allegheny grades



Over the Alleghenies, the C&O lines reach 2,072 feet above sea level and there are grades in excess of 1.14 per cent.

To handle its heavy freight traffic in this mountainous terrain, the C&O employs forty-five of these giant, four-cylinder, six-coupled, articulated steam locomotives, built by Lima.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

attended Johns Hopkins University. He had been in the engineering department of the Western Electric Company for eleven years before being called to active duty early in 1941. Assigned to the Philadelphia ordnance district, he served as chief of the tank and automotive division and as assistant chief of the industrial division. Later he served in the European theater with the ordnance industrial division.

Ellis L. Spray, vice-president in charge of the elevator and air-conditioning divisions of the **Westinghouse Electric Corporation** at Jersey City, N. J., has been elected executive vice-president of a new organization, to be known as the **B. F. Sturtevant Company,** division of Westinghouse Electric. The manufacturing and engineering facilities of the B. F. Sturtevant Company, which was purchased by Westinghouse in September, 1945, are being integrated with the facilities of the Westinghouse air-conditioning division, which has been transferred from Jersey City to the Sturtevant main plant at Hyde Park, Boston, Mass. **G. C. Perry,** formerly vice-president of the Sturtevant Company, has been elected vice-president and general manager and **E. B. Williams,** formerly vice-president of the Sturtevant Company, continues in that office.

Arthur Williams, chief engineer, has been elected vice-president in charge of engineering of the **Superheater Company** of New York. Mr. Williams was born in England and was educated at Queen's College, Taunton and Swindon, and at the North Wilts Technical Institution. After serving as a special apprentice with the Great Western Railway in England, he came to this country in 1926. He successively was associated with the Franklin Railway Supply, the Lima Locomotive Works and in September, 1927, with the engineering department of the Superheater Company. He was appointed research engineer in 1930, assistant chief engineer in

Arthur Williams

1938 and chief engineer in 1942. He is a member of the American Society of Mechanical Engineers, the Institution of Locomotive Engineers, London, and an associate member of Institution of Mechanical Engineers, London.

T. F. Birmingham, works manager, has been elected a vice-president in charge of production at the company's plant at East Chicago, Ind. During his earlier career, Mr. Birmingham was employed as a machinist apprentice with the Union Pacific at Omaha, Neb., and as an inspector at the Baldwin Locomotive Works for the Harri-

T. F. Birmingham

man Lines. He was appointed an inspector for the Superheater Company at builders' plants in 1911, and was superintendent at the Superheater Company plant in 1916. He was appointed works manager in 1930. He is a member of the American Society for Metals.

Charles H. Creasser has been appointed assistant works manager of the company's East Chicago plant. Mr. Creasser received degrees in engineering, economics and law from the Universities of Illinois, Butler and Indiana. Later he was employed in the mechanical department of the New York Central and during the last four years served in Washington, D. C., as chief of the motive power section, transportation equipment division, of the War Production Board and as chief of the railway equipment branch, supply division, Transportation Corps.

J. F. Griffin, assistant chief engineer, has been appointed chief engineer. Mr. Griffin served as an engineering officer in the U. S. Navy during the first world war. He joined the engineering staff of the Locomotive Feedwater Heater Company in 1919 and was appointed mechanical engineer in 1920. He joined the engineering department of the Superheater Company in 1921, and was appointed assistant chief engineer in 1943.

OBITUARY

Harry A. Brown, who retired in 1939 as treasurer of The Pullman Company, died at Tucson, Ariz., on March 14.

Frank Parker, chairman of the board of Iron & Steel Products, Inc., Chicago, died in a hospital in that city on March 17.

John Y. Sloan, vice-president of the Pullman-Standard Car Manufacturing Company, with headquarters at Chicago, died at his home in Highland Park, Ill., on March 13. Mr. Sloan was born at Buffalo, N. Y., and was a graduate of Cornell University. He began his business career in 1901 when he joined Pullman as an assistant to the general foreman of the Buffalo repair shops. He subsequently held various minor positions until January 1, 1915, when he was promoted to sales agent, with headquarters at Chicago. In 1925 Mr. Sloan was advanced to manager of sales, with the same headquarters. In 1926 he was appointed manager of eastern sales at New York, and two years later he was elected a vice-president returning to Chicago in the same year where he remained up to the time of his death.

TRADE PUBLICATIONS

PLASTIMENT—An eight-page illustrated booklet describing Plastiment, "The Concrete Densifier", has been published by the Sika Chemical Corporation, Passaic, N. J. This booklet explains the effect of adding Plastiment to concrete mixtures and describes in detail the benefits claimed for its use.

Equipment and Supplies

FREIGHT CARS

The NORTHERN PACIFIC has contracted with the Northern Refrigerator Lines, Inc., for the delivery of 50 new freight refrigerator cars, to be constructed at a cost of $500,000.

The PACIFIC FRUIT EXPRESS (owned jointly by the Union Pacific and the Southern Pacific) is inquiring for 2,000 40-ton refrigerator cars. The parent companies' authorization to purchase this equipment was reported in the *Railway Age* of January 26.

PASSENGER CARS

The KANSAS CITY SOUTHERN has ordered eight new-type sleeping cars from the Pullman-Standard Car Manufacturing Company. Each car will contain 16 duplex roomettes and four bedrooms.

Construction

BALTIMORE & OHIO.—This road has awarded a contract to the Ogle Construction Company for the erection of a 500-ton capacity, four-track, reinforced concrete coaling station with sanding facilities, and for a three-track locomotive ash handling plant at Garrett, Ind.

BALTIMORE & OHIO.—This railroad has awarded contracts for the reconstruction of its bridges at Philippi, W. Va., Post Mills, W. Va., and Walkersville, W. Va., at estimated cost of $29,242, to the Bates & Rogers Construction Corp. of Chicago and for changing a creek and filling its two bridges at Orlando, W. Va., at estimated cost of $44,720, to the Sutton Company of Radford, Va.

CHICAGO & NORTH WESTERN.—This road has purchased from the Ogle Construction Company a 150-ton capacity, two-track,

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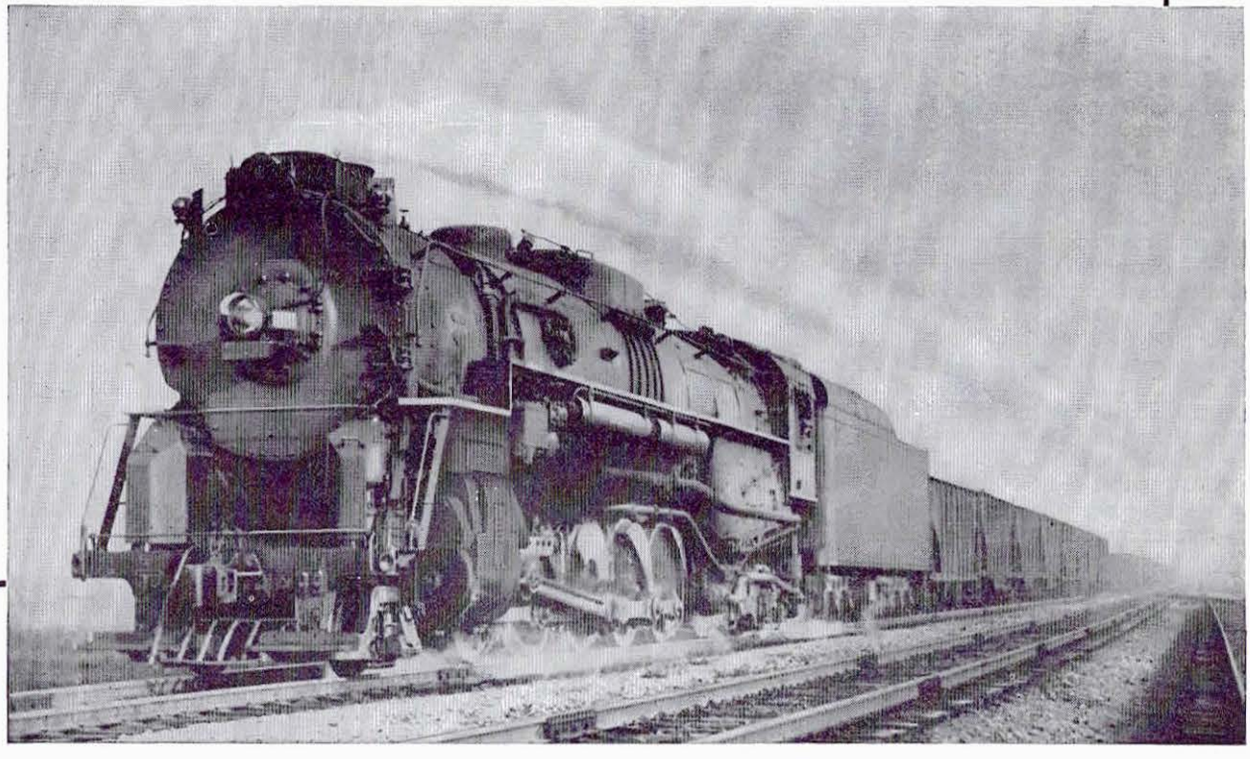

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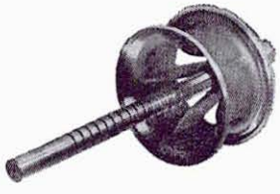

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revenues. Railway operating expenses of $451,145,598 were $30,213,910 or 7.2 per cent more than in 1944, chiefly due to an increase of $27,869,548 in charges for amortization of defense facilities. Railway tax accruals of $63,507,538 were lower by $67,473,725 or 51.5 per cent than in 1944. Largely as a result of these factors, the consolidated net income of the properties for 1945 declined to $35,772,744 or 14.5 per cent less than in 1944.

During 1945 the principal amount of unmatured funded debt and equipment obligations held by the public decreased in the net amount of $49,561,121. Mr. Mercier stated that the company's plant afforded the greatest physical capacity in the railroad's history. In 1935, $89,748,541 was expended for maintenance of way and structures and $126,414,306 for maintenance of equipment. The company has ordered new freight cars of various kinds costing more than $14,000,000 and, in addition, the Pacific Fruit Express Company, in which the Southern Pacific has a one-half ownership, has ordered new refrigerator cars costing $12,000,000.

UNION PACIFIC.—*Awards Bonds.*—The Union Pacific on March 13 awarded $81,602,000 of Series C, 2½ per cent refunding mortgage bonds due March 1, 1991, to Halsey Stewart & Co. and associates at 101.27. The price paid for the issue represented a net interest cost to the railroad of 2.453 per cent and broke all records for low interest cost on long-term refinancing. The bonds were reoffered subject to I. C. C. approval at 102.10, to yield 2.42 per cent to maturity. The proceeds from the sale are to be applied, with other funds, to the retirement at 107 of an equal principal amount of Series B, 3 per cent refunding mortgage bonds, also due in 1990 which were marketed last September.

WHEELING & LAKE ERIE.—*Objects to New York Central Proposal.*—George Durham, president and general manager of the Wheeling & Lake Erie, said in an Interstate Commerce Commission hearing on March 15 that "the Wheeling would stand to lose about $1,225,380 a year in net railway operating income" should the New York Central be given additional trackage rights over the Wheeling and access to the originating sources of its coal traffic. "The transaction might result in bankruptcy," he said, since the Central "would very soon be transporting over its own lines practically all of the revenue rail shipment of coal produced along the Wheeling's tracks, used by the New York Central, with the exception of a relatively small tonnage that might move to local points on the W. & L. E." The Central, in seeking authority to intervene in the proposed acquisition by the Nickel Plate of (1) Chesapeake & Ohio holdings of 78,145 shares of Wheeling common stock and (2) of direct control of the Wheeling, has asked that I. C. C. approval be conditioned on its right to operate its trains over 39.89 miles of Wheeling tracks.

Average Prices Stocks and Bonds

	March 19	Last week	Last year
Average price of 20 representative railway stocks	61.86	62.06	50.51
Average price of 20 representative railway bonds	102.26	102.35	96.17

Dividends Declared

Chicago, Milwaukee, St. Paul & Pacific.—5% participating preferred A, initial $5, payable May 1 to holders of record April 15.

Mahoning Coal. — (Increased) $7.50, payable April 1 to holders of record March 23.

Minneapolis, St. Paul & Sault St. Marie.—Initial, $2.50, payable April 15 to holders of record April 1.

New London Northern.—Quarterly, $1.75, payable April 1 to holders of record March 15.

Pennsylvania.—$1.00, payable April 13 to holders of record March 23.

Pere Marquette.—Prior preference, $1.25, payable May 1 to holders of record April 5.

Providence & Worchester. — Quarterly, $2.50, payable April 1 to holders of record March 15.

Pittsburgh, Bessemer & Lake Erie.—Semi-annually, 75¢, payable April 1 to holders of record March 15.

Savannah & Atlanta.—5% preferred, quarterly, $1.25, payable April 1 to holders of record March 13.

Sharon.—$1.00, payable April 1 to holders of record March 22.

Spokane International.—$2.50, payable April 1 to holders of record March 22.

Vermont & Massachusetts. — Semi-annually, $3.00, payable April 8 to holders of record April 1.

Abandonments

GRAND TRUNK WESTERN.—Lucian Jordan, Interstate Commerce Commission examiner, has recommended that Division 4 approve an application of this road to abandon a line from Greenville, Mich., to a point near Muskegon, 49.08 miles, on which no freight has been handled locally since 1942.

PERE MARQUETTE.—Division 4 of the Interstate Commerce Commission, on petition of the Railway Labor Executives Association and Order of Railway Conductors, has extended for an additional period of 2 years its reservation of jurisdiction with respect to the protection of employees who may be adversely affected by this road's line abandonment from Clare, Mich., to Harrison, authorized in 1944.

SOUTHERN PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to abandon a portion of a branch from Gates, Ore., to Idanha, 20.568 miles, a segment of which will be submerged by the construction of a dam by the government.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

Louis R. Wood, assistant general attorney of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., has retired as a result of a lengthy illness.

Dana T. Smith, assistant general western counsel of the Union Pacific, with headquarters at Omaha, Neb., will retire on April 1 after 34 years of service.

R. Paul Tjossem, formerly assistant attorney general for the State of Washington at Olympia, Wash., has been appointed assistant western counsel of the Great Northern, with headquarters at Seattle, Wash.

OPERATING

J. Benton Jones, superintendent of the New York division of the Pennsylvania, with headquarters at Jersey City, N. J., has been appointed general superintendent of the Eastern Ohio division, at Pittsburgh, Pa. **Paul W. Triplett,** superintendent of the Erie and Ashtabula division, has been transferred to succeed Mr. Jones at Jersey City.

Mr. Jones was born at Danville, Ill., on March 22, 1905, and was graduated from the University of Illinois (1926, B. S., civil engineering). He entered railroading in 1926 with the Chicago & Eastern Illinois as a rodman at Danville, then went with the Pennsylvania in 1927 as assistant in the engineering corps, Logansport division. After advancing to assistant supervisor and serving at various points in this capacity, he was appointed track supervisor, Lock Haven, Pa., in 1934, and later transferred to Washington, D. C., and New York, successively. He became division engineer of the St. Louis division, Terre Haute, Ind., in 1939, then assistant superintendent freight transportation, Central region, at Pittsburgh in January, 1940, and superintendent, Indianapolis division, Indianapolis, Ind., in November, 1940. In 1941, Mr. Jones was transferred to the Cleveland division and in 1942 to the New York division, maintaining the latter post until his promotion on March 15.

J. Benton Jones

G. E. Smothers, trainmaster for the Southern at Columbia, S. C., has been transferred to Greensboro, N. C., succeeding **J. F. Beaver,** whose promotion to superintendent at Richmond, Va., was announced in the *Railway Age* of March 16. **H. R. Moore,** track supervisor at Charleston, S. C., has been appointed trainmaster at Columbia, succeeding Mr. Smothers.

E. H. Locke, assistant superintendent for the Canadian Pacific at Montreal, Que., has been transferred to London, Ont., succeeding **J. H. Stevenson,** whose promotion to superintendent of terminals at Black Rock, N. Y., was announced in the March 16 issue of *Railway Age.* **J. D. McBain,** assistant superintendent at Montreal, with jurisdiction over the St. Hyacinthe, St.

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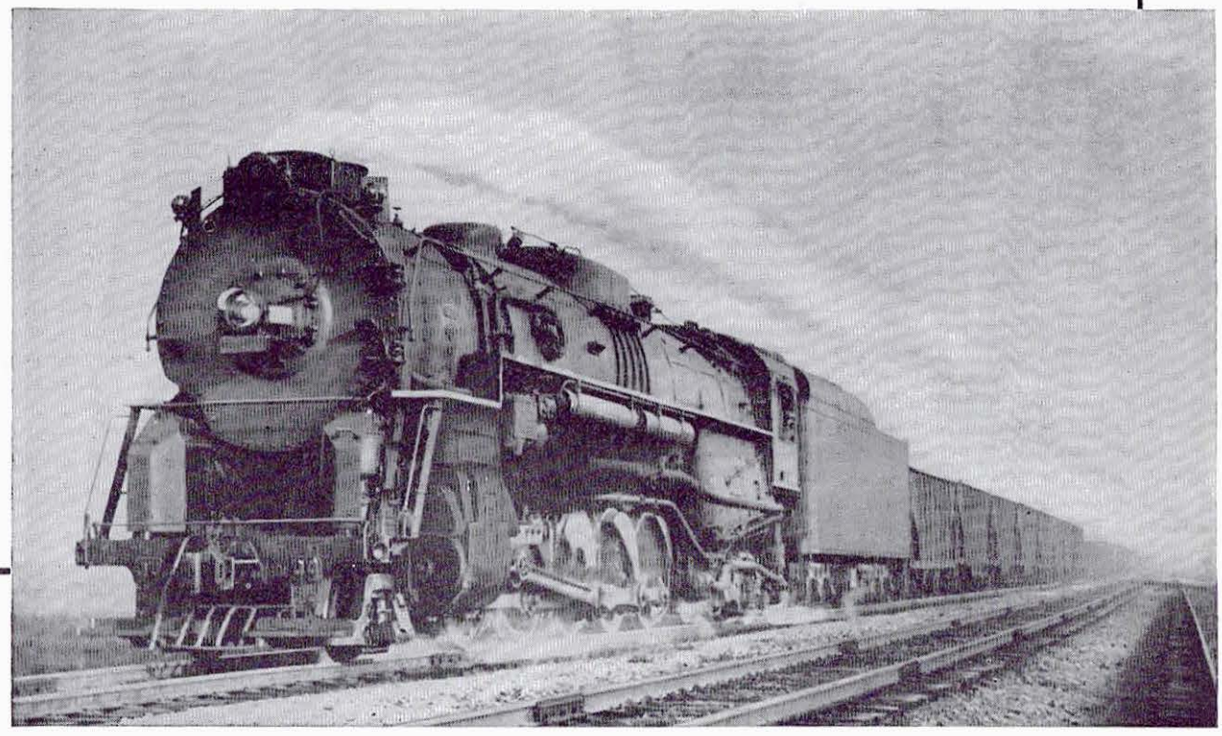

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main-line steel coaling station, to be erected at Lowden, Iowa.

PENNSYLVANIA.—The U. S. Engineer Office, Pittsburgh, Pa., has received bids for grading, bridges, substructures and tunneling work for the relocation of 16.13 miles of line on the Conemaugh division, which will be required by construction of the Conemaugh reservoir. The Hunkin-Conkey Construction Company and Shofner, Gordon & Hinman, Cleveland, Ohio, were low bidders on contract No. 1 (5.02 miles) —$1,719,227; contract No. 2 (4.41 miles)— $1,377,392; and contract No. 4 (5.21 miles) —$1,139,015; and Herman Holmes, Crystal Falls, Mich., was low bidder on contract No. 3 (1.49 miles, including short tunnel) —$2,175,045. Some of the principal quantities for the project as a whole (all four contracts) include 3,643,800 cu. yd. of grading and borrow; 70,310 cu. yd. of concrete for tunnel lining, and bridge footings, piers, abutments and structures; 1,538 tons of steel reinforcing; and 815 tons of steel tunnel supports.

SOUTHERN.—As part of an improvement and expansion program which will be completed at a total cost of more than $800,000, this road has awarded three new contracts as follows: To the MacDougald Construction Company, Atlanta, Ga., for filling trestles near Nauvoo, Ala., and Natural Bridge, $24,000; to the George M. Eady Company, Louisville, Ky., for construction of a culvert near Shelbyville, Ky., $41,000, and to the Elliott Building Company, Hickory, N. C., for construction of an extension to a freight depot at Hickory, $90,000. Other projects which will be undertaken as part of the general program include the following: Construction of peach loading and storage tracks at Mascott, S. C., $37,000; extension of a team yard at Atlanta, Ga., $69,500; construction of additional yard tracks at Atlanta, $133,000; filling trestles near Alta, Ala., and Lawrenceburg, Ky., $72,760 and $56,300, respectively, and renewing of the Broad Run bridge near Bristow, Va., $186,000.

Financial

BALTIMORE & OHIO.—*Court Approves Debt Plan.*—On March 13 a three-judge federal court at Baltimore, Md., signed a decree approving the B. & O.'s $500,000,000 debt adjustment plan.

CATON & LOUDON.—*Acquisition.*—This new company has applied to the Interstate Commerce Commission for authority to acquire for $23,000 cash the property of the Catonsville Short Line, operated by the Pennsylvania under lease, and in connection therewith to issue nominally 200 shares of capital stock of $50 par value. Funds for the transaction are to be provided by a loan of $25,000 by David W. Chertkof, president of the new company.

BOSTON & MAINE.—*Acquisition.*—Division 4 of the Interstate Commerce Commission has authorized this company to acquire control of the Troy & Bennington through ownership of its capital stock. No changes in operation will result from the acquisition, as the B. & M. has operated the line under lease since 1900, paying an annual rental of $15,400, or slightly more than $10 a share on the outstanding 1,508 shares of Bennington stock. The B. & M. holds 436 shares of this stock; it has arranged to purchase 785 additional shares at $200 a share, and has offered to purchase the remaining 387 shares.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $1,750,000 of 1⅛ per cent equipment trust certificates in connection with its acquisition of 200 70-ton covered hopper cars at $4,355 each and 500 50-ton hopper cars at $2,690 each. (Previous item in *Railway Age* of March 2, page 482.)

CHICAGO & EASTERN ILLINOIS.—*New Director Elected.*—Donald W. Hornbeck, president of the National Bronze & Aluminum Foundry Co., has been elected a member of the board of directors of the Chicago & Eastern Illinois. He succeeds William D. Fowler, who has resigned.

DETROIT, TOLEDO & IRONTON.—*Awards Bonds.*—The Detroit, Toledo & Ironton has awarded $9,626,000 of new first mortgage bonds to Shields & Co. and White, Weld & Co., and associates, on a bid of 100.325 for a 2¾ per cent coupon. The bonds were reoffered at 101. (See previous item in *Railway Age* of March 9, page 529.)

FLORIDA EAST COAST.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue $1,272,156 of 1.35 per cent promissory notes, the proceeds of which will be used for the purchase of 20 stainless steel passenger cars from the Edward G. Budd Manufacturing Company. The cars are due to be delivered on or before December 1.

GREAT NORTHERN.—*Awards Bonds.*—On March 20, the Great Northern awarded $40,000,000 of Series P, 2¾ per cent general mortgage bonds due in 1982 and $35,000,000 of Series Q, 2⅝ per cent bonds due in 2010 to Morgan Stanley & Co. and associates, at a price of 98.071 for both issues. The 2¾ per cent bonds were reoffered at 101.14 to yield 2.75 per cent. (Previous item in *Railway Age* of March 16, page 593.)

LEHIGH VALLEY.—*Annual Report.*—A comparison of the Lehigh Valley's 1945 income statement with 1944 follows:

	1945	1944
Operating Revenues	$77,732,845	$97,465,274
Operating Expenses	70,107,290	70,873,269
Net Operating Revenue	$7,625,555	$26,592,005
Railway Tax Accruals	$4,032,140	$13,486,227
Equipment Rents—Net	4,073,101	5,228,654
Joint Facility Rents—Net	106,433	48,822
Net Railway Operating Income	$586,119*	$7,828,292
Other Income	$910,304	$854,642
Deductions from Income	7,895,290	7,910,814
Net Income	$7,562,105*	$772,120

* Deficit.

In the annual report, F. R. Gerard, president, explained that the decrease in operating expenses would have been in proportion to the decrease in gross revenues if it had not been for extraordinary accruals and charges, largely non-recurring, chiefly the following: Extraordinary expenses incurred because of abnormal weather conditions, $1,905,762, and the resultant diversion of freight from normal routes, $3,000,000; inclusion of $258,402 in maintenance of way expenses and $7,422,633 in maintenance of equipment expenses in December, 1945, for accelerated amortization of war facilities; and retirement of facilities no longer needed for operating purposes, $707,480.

NEW YORK, NEW HAVEN & HARTFORD.—*To Pay Interest.*—Trustees of the New York, New Haven & Hartford have petitioned the U. S. District Court at New Haven, Conn., for permission to pay interest charges totaling $9,041,134 and for authority to sell waterfront acreage in New Haven for $30,000.

NORTHERN PACIFIC.—*Annual Report.*—Since 1939, the long term mortgage debt of the Northern Pacific has been reduced $56,152,100, according to the company's annual report. The resultant annual interest saving is $4,085,466.

Operating revenues of the company in 1945 were $149,244,108, a decrease of $6,734,202 or 4.3 per cent compared with 1944. Operating expenses were $132,606,256, an increase of $24,988,069 or 23.2 per cent over 1944. Included in operating expenses is a charge of $20,530,958 for accelerated amortization of equipment and other facilities provided to handle war traffic. Maintenance expenses totaled $77,218,706, an increase of $24,987,367 or 47.8 per cent over 1944. Taxes amounted to $2,709,879, a decrease of $26,065,980 or 90.6 per cent. Other income amounted to $7,475,129, as compared with $4,005,143 in 1944. Net income after all charges was $11,559,861, a decrease of $1,601,124 or 12.2 per cent as compared with 1944.

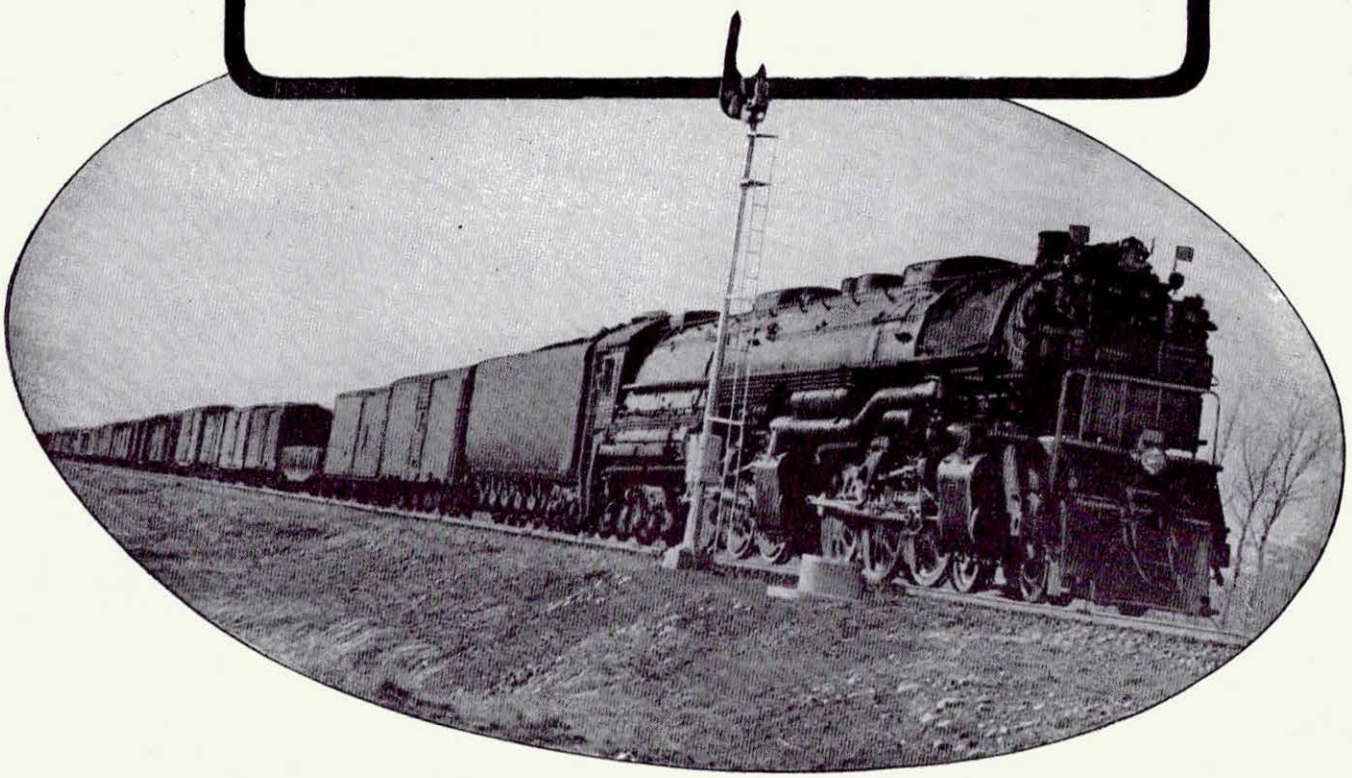
SOUTHERN PACIFIC.—*Refunding.*—The Southern Pacific Railroad has applied to the Interstate Commerce Commission for authority to issue $25,000,000 of Series G first mortgage bonds due in 1961, the proceeds of which will be applied to the redemption at 101⅝ per cent of an equal principal amount of Series A 2⅞ per cent first mortgage bonds, also due in 1961. The interest rate on Series G will be set by competitive bidding. The Southern Pacific Company has asked for authority to guarantee the new issue.

SOUTHERN PACIFIC.—*Annual Report.*—In his annual report for 1945, A. T. Mercier, president of the Southern Pacific, stated that the prospects are for a traffic volume generally above pre-war levels, due to an expected increase in business activity and travel throughout the country and, more specifically in territories served by the S. P., to an enlarged industrial development and population growth.

Railway operating revenues of the Southern Pacific system in 1945 amounted to $590,262,532, a decrease of $37,960,985 or 6.04 per cent under 1944. A decrease of $39,966,159 in freight revenues, which were 8.95 per cent less than in 1944, and a decrease of $629,520, or less than 1 per cent, in passenger revenues, were partly offset by moderate increases in earnings from mail and express traffic and all other operating

News Department continued on next left-hand page

WHEN *Every Pound* OF POWER IS NEEDED



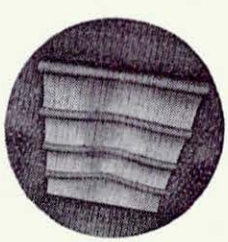
a complete brick arch in the firebox is a first essential toward securing full fuel efficiency.

The cost of maintaining a complete arch at all times is but a fraction of that of the coal which is saved.

And the harder the locomotive is working, the greater are the gains from the maintenance of a complete Security Sectional Arch.

HARBISON-WALKER REFRACTORIES CO.
Refractories Specialists.

March 23, 1946



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Locomotive Combustion Specialists

revenues. Railway operating expenses of $451,145,598 were $30,213,910 or 7.2 per cent more than in 1944, chiefly due to an increase of $27,869,548 in charges for amortization of defense facilities. Railway tax accruals of $63,507,538 were lower by $67,473,725 or 51.5 per cent than in 1944. Largely as a result of these factors, the consolidated net income of the properties for 1945 declined to $35,772,744 or 14.5 per cent less than in 1944.

During 1945 the principal amount of unmatured funded debt and equipment obligations held by the public decreased in the net amount of $49,561,121. Mr. Mercier stated that the company's plant afforded the greatest physical capacity in the railroad's history. In 1935, $89,748,541 was expended for maintenance of way and structures and $126,414,306 for maintenance of equipment. The company has ordered new freight cars of various kinds costing more than $14,000,000 and, in addition, the Pacific Fruit Express Company, in which the Southern Pacific has a one-half ownership, has ordered new refrigerator cars costing $12,000,000.

UNION PACIFIC.—*Awards Bonds.*—The Union Pacific on March 13 awarded $81,602,000 of Series C, 2½ per cent refunding mortgage bonds due March 1, 1991, to Halsey Stewart & Co. and associates at 101.27. The price paid for the issue represented a net interest cost to the railroad of 2.453 per cent and broke all records for low interest cost on long-term refinancing. The bonds were reoffered subject to I. C. C. approval at 102.10, to yield 2.42 per cent to maturity. The proceeds from the sale are to be applied, with other funds, to the retirement at 107 of an equal principal amount of Series B, 3 per cent refunding mortgage bonds, also due in 1990 which were marketed last September.

WHEELING & LAKE ERIE.—*Objects to New York Central Proposal.*—George Durham, president and general manager of the Wheeling & Lake Erie, said in an Interstate Commerce Commission hearing on March 15 that "the Wheeling would stand to lose about $1,225,380 a year in net railway operating income" should the New York Central be given additional trackage rights over the Wheeling and access to the originating sources of its coal traffic. "The transaction might result in bankruptcy," he said, since the Central "would very soon be transporting over its own lines practically all of the revenue rail shipment of coal produced along the Wheeling's tracks, used by the New York Central, with the exception of a relatively small tonnage that might move to local points on the W. & L. E." The Central, in seeking authority to intervene in the proposed acquisition by the Nickel Plate of (1) Chesapeake & Ohio holdings of 78,145 shares of Wheeling common stock and (2) of direct control of the Wheeling, has asked that I. C. C. approval be conditioned on its right to operate its trains over 39.89 miles of Wheeling tracks.

Average Prices Stocks and Bonds

	March 19	Last week	Last year
Average price of 20 representative railway stocks	61.86	62.06	50.51
Average price of 20 representative railway bonds	102.26	102.35	96.17

Dividends Declared

Chicago, Milwaukee, St. Paul & Pacific.—5% participating preferred A, initial $5, payable May 1 to holders of record April 15.

Mahoning Coal. — (Increased) $7.50, payable April 1 to holders of record March 23.

Minneapolis, St. Paul & Sault St. Marie.—Initial, $2.50, payable April 15 to holders of record April 1.

New London Northern.—Quarterly, $1.75, payable April 1 to holders of record March 15.

Pennsylvania.—$1.00, payable April 13 to holders of record March 23.

Pere Marquette.—Prior preference, $1.25, payable May 1 to holders of record April 5.

Providence & Worchester. — Quarterly, $2.50, payable April 1 to holders of record March 15.

Pittsburgh, Bessemer & Lake Erie.—Semi-annually, 75¢, payable April 1 to holders of record March 15.

Savannah & Atlanta.—5% preferred, quarterly, $1.25, payable April 1 to holders of record March 13.

Sharon.—$1.00, payable April 1 to holders of record March 22.

Spokane International.—$2.50, payable April 1 to holders of record March 22.

Vermont & Massachusetts. — Semi-annually, $3.00, payable April 8 to holders of record April 1.

Abandonments

GRAND TRUNK WESTERN.—Lucian Jordan, Interstate Commerce Commission examiner, has recommended that Division 4 approve an application of this road to abandon a line from Greenville, Mich., to a point near Muskegon, 49.08 miles, on which no freight has been handled locally since 1942.

PERE MARQUETTE.—Division 4 of the Interstate Commerce Commission, on petition of the Railway Labor Executives Association and Order of Railway Conductors, has extended for an additional period of 2 years its reservation of jurisdiction with respect to the protection of employees who may be adversely affected by this road's line abandonment from Clare, Mich., to Harrison, authorized in 1944.

SOUTHERN PACIFIC.—This road has applied to the Interstate Commerce Commission for authority to abandon a portion of a branch from Gates, Ore., to Idanha, 20.568 miles, a segment of which will be submerged by the construction of a dam by the government.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

Louis R. Wood, assistant general attorney of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., has retired as a result of a lengthy illness.

Dana T. Smith, assistant general western counsel of the Union Pacific, with headquarters at Omaha, Neb., will retire on April 1 after 34 years of service.

R. Paul Tjossem, formerly assistant attorney general for the State of Washington at Olympia, Wash., has been appointed assistant western counsel of the Great Northern, with headquarters at Seattle, Wash.

OPERATING

J. Benton Jones, superintendent of the New York division of the Pennsylvania, with headquarters at Jersey City, N. J., has been appointed general superintendent of the Eastern Ohio division, at Pittsburgh, Pa. **Paul W. Triplett,** superintendent of the Erie and Ashtabula division, has been transferred to succeed Mr. Jones at Jersey City.

Mr. Jones was born at Danville, Ill., on March 22, 1905, and was graduated from the University of Illinois (1926, B. S., civil engineering). He entered railroading in 1926 with the Chicago & Eastern Illinois as a rodman at Danville, then went with the Pennsylvania in 1927 as assistant in the engineering corps, Logansport division. After advancing to assistant supervisor and serving at various points in this capacity, he was appointed track supervisor, Lock Haven, Pa., in 1934, and later transferred to Washington, D. C., and New York, successively. He became division engineer of the St. Louis division, Terre Haute, Ind., in 1939, then assistant superintendent freight transportation, Central region, at Pittsburgh in January, 1940, and superintendent, Indianapolis division, Indianapolis, Ind., in November, 1940. In 1941, Mr. Jones was transferred to the Cleveland division and in 1942 to the New York division, maintaining the latter post until his promotion on March 15.

J. Benton Jones

G. E. Smothers, trainmaster for the Southern at Columbia, S. C., has been transferred to Greensboro, N. C., succeeding **J. F. Beaver,** whose promotion to superintendent at Richmond, Va., was announced in the *Railway Age* of March 16. **H. R. Moore,** track supervisor at Charleston, S. C., has been appointed trainmaster at Columbia, succeeding Mr. Smothers.

E. H. Locke, assistant superintendent for the Canadian Pacific at Montreal, Que., has been transferred to London, Ont., succeeding **J. H. Stevenson,** whose promotion to superintendent of terminals at Black Rock, N. Y., was announced in the March 16 issue of *Railway Age.* **J. D. McBain,** assistant superintendent at Montreal, with jurisdiction over the St. Hyacinthe, St.

News Department continued on next left-hand page

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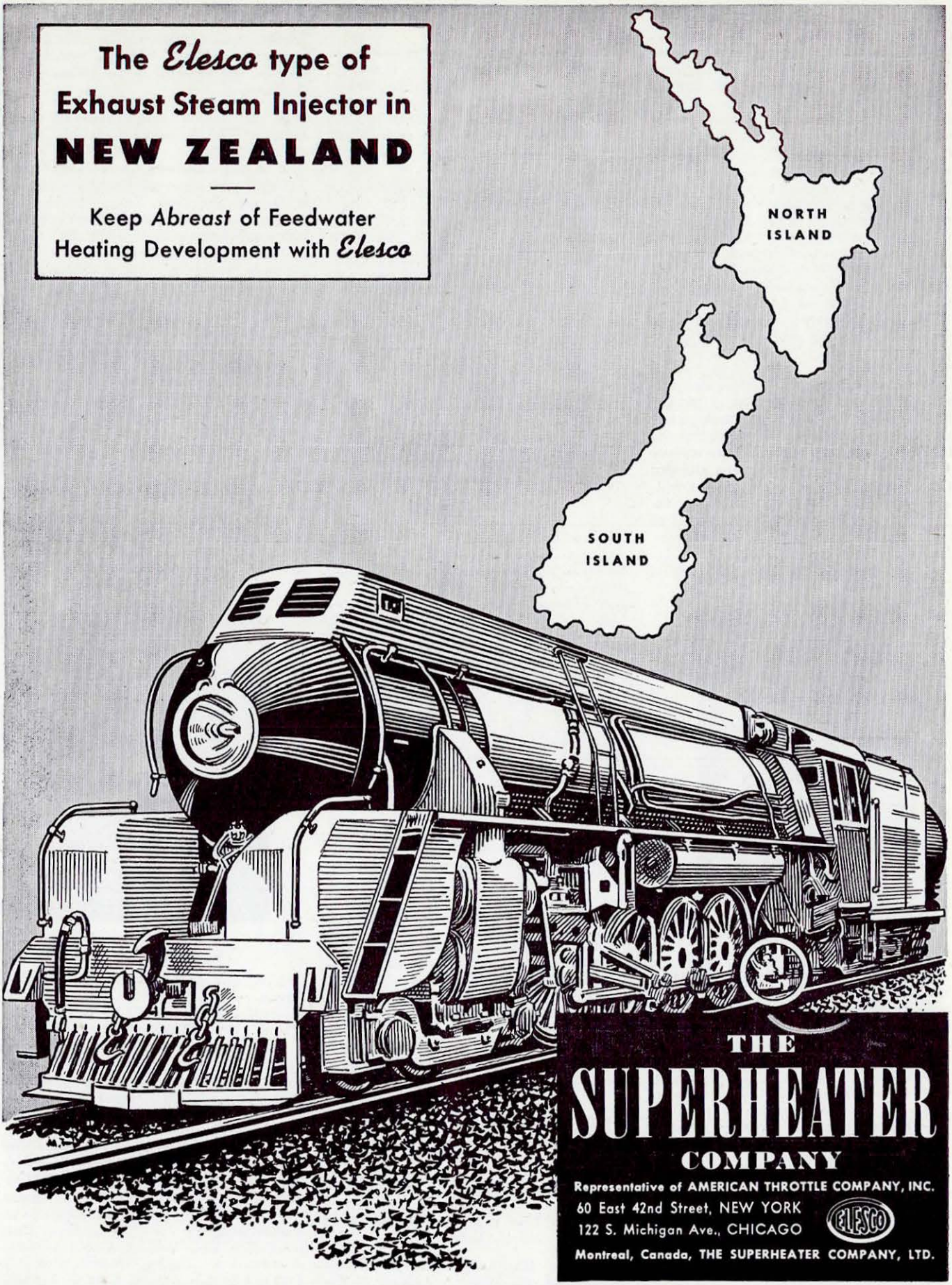

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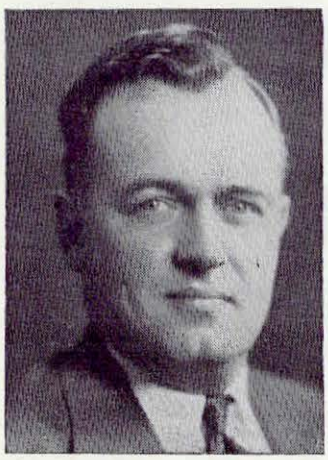
Judes, Rouses Point, Massena, Beauharnois, Hemmingford, Lemoyne, and Granby subdivisions, has been transferred to succeed Mr. Locke, with jurisdiction over the Cornwall subdivision, Montreal. **F. E. Carlin,** trainmaster, St. Lawrence division, at Montreal, has been appointed assistant superintendent there, succeeding Mr. McBain. **A. O. Lalonde** succeeds Mr. Carlin as trainmaster.

B. S. Sines, assistant superintendent of the Tucson division of the Southern Pacific, has been promoted to superintendent of the Salt Lake division, with headquarters at Ogden, Utah, succeeding **V. M. Petterson,** who has been transferred to the Rio Grande division, with headquarters at El Paso, Tex., where he replaces **H. S. Fairbank,** who has retired after 51 years of service.

Ward B. Adams, whose appointment as assistant general superintendent of the Lehigh & New England, with headquarters at Pen Argyl, Pa., was announced in the February 9 *Railway Age,* was born on July 4, 1908, at Huntington, Ind., and attended Ohio State University. He entered railway service in 1929 as a rodman for the Erie at Youngstown, Ohio, then served at various points as yard clerk, ice inspector, laborer, and dock clerk, successively. He was appointed freight house foreman at



Ward B. Adams

New York in 1933, then yardmaster, Weehawken yard, N. J., in 1937, and advanced to night general yardmaster, Jersey City, N. J., in 1938. He was promoted to inspector of operation at Cleveland, Ohio, in March, 1939, and to trainmaster, Mahoning division, Youngstown, in September, 1939, transferring to the Kent division, Kent, Ohio, in 1942, where he remained until January 16, when he entered the service of the Lehigh & New England as assistant general superintendent.

F. L. Foster, superintendent freight transportation of the Pittsburgh & Lake Erie and the Lake Erie & Eastern, has been appointed superintendent, with headquarters as before at Pittsburgh, Pa., succeeding **F. P. Ketterer,** who has been assigned to other duties. **N. E. Zitzman,** assistant superintendent freight transportation there, has been promoted to succeed Mr. Foster.

TRAFFIC

Henry J. Riggert, whose promotion to assistant traffic manager of the Denver & Rio Grande Western, with headquarters at Salt Lake City, Utah, was reported in the *Railway Age* of March 2, was born at Chicago on January 7, 1896. He entered railway service with The Pullman Company in

Henry J. Riggert

1913 and two years later he went with the Atchison, Topeka & Santa Fe and was assigned to the city ticket office at Chicago. After serving in World War I, Mr. Riggert returned to the Santa Fe where he held various minor positions until 1922, when he went with the D. & R. G. W., and shortly after was promoted from city passenger agent to traveling passenger agent. From 1929 to 1934 he was in private business, returning to the Rio Grande in the latter year as city freight agent, with headquarters at Chicago. On November 11, 1940, Mr. Riggert was advanced to general agent, freight department, at Salt Lake City, the position he held at the time of his new appointment.

Alfred J. O'Connor has been appointed general agent for the Chicago Great Western, with headquarters at Philadelphia, Pa., succeeding **E. O'Donnell,** who has been transferred.

R. E. McGlothlen, commercial agent of the St. Louis Southwestern at Los Angeles, Cal., has been promoted to general agent and placed in charge of a recently-opened office of the Cotton Belt at Phoenix, Ariz. Another new office has been opened at El Paso, Tex., and will be in charge of **E. B. Estes,** general agent, who has been transferred from Texarkana, Tex., to that point.

ENGINEERING & SIGNALING

B. H. Crosland, recently released from the armed forces and former division engineer on the St. Louis-San Francisco at Ft. Scott, Kan., has returned to that road as assistant chief engineer, with headquarters at Springfield, Mo.

W. H. Huffman, assistant division engineer on the Western division of the Chicago, St. Paul, Minneapolis & Omaha (part of the Chicago & North Western System), at St. Paul, Minn., has been promoted to division engineer, with the same headquarters, succeeding **H. W. Jensen,** whose promotion to office engineer of the North Western System, at Chicago, was reported in the *Railway Age* of March 9.

W. N. Young, assistant to the chief engineer of the Baltimore & Ohio, at Baltimore, Md., has been appointed chief engineer of the Lakefront Dock & Railroad Terminal (a joint subsidiary of the B. & O. and the New York Central), at Toledo, Ohio, succeeding **K. J. Wagoner,** whose appointment as assistant chief engineer of the B. & O., at Baltimore, was reported in the *Railway Age* of February 16.

George A. Boyer, assistant division engineer on the Southern Pacific, at El Paso, Tex., has been appointed division engineer at San Antonio, Tex., succeeding **J. H. Knowles,** who has retired. **R. G. Schultz,** recently released from the armed forces and formerly inspector of bridges and buildings in the chief engineer's office at Houston, Tex., succeeds Mr. Boyer as assistant division engineer at El Paso.

MECHANICAL

H. T. Cover, general superintendent of the Eastern Ohio division of the Pennsylvania, with headquarters at Pittsburgh, Pa., has been appointed chief of motive power of the system, with headquarters at Phila-

H. T. Cover

delphia, Pa., succeeding the late **H. W. Jones,** whose photograph appeared with a biographical account of his career in the March 2 issue of *Railway Age.*

Mr. Cover was born in Altoona, Pa., on August 25, 1897, and was graduated from Pennsylvania State College in electrical engineering. He first served the Pennsylvania for two weeks as a laborer during August, 1915, at Altoona, where he served subsequently as boilermaker's helper and then draftsman in the office of general superintendent motive power. In 1920 he became special apprentice in the Altoona works; in 1922, motive power inspector at Philadelphia, Pa.; in 1923, assistant shop foreman at New York, and, in 1924, foreman there, transferring to Philadelphia in 1927 and to East Altoona in 1929. He was promoted to assistant master mechanic on the Maryland division in 1931, then to master mechanic, Buffalo division, N. Y., in 1934, and was transferred subsequently to

the Maryland, and the Columbus, Cincinnati and Toledo divisions successively. Mr. Cover was appointed superintendent of the Wilkes-Barre division, with headquarters at Sunbury, Pa., in 1940, and in 1942 was advanced to superintendent of freight transportation, Eastern region, Philadelphia, and later that year was promoted to general superintendent, which position he held at Pittsburgh until his recent promotion became effective on March 14.

Leonard C. Kirkhuff, whose appointment as superintendent motive power of the Virginian, with headquarters at Princeton, W. Va., was announced in the *Railway Age* of March 2, was born on October 3, 1899, at Hutchinson, Kan., and entered railroading in 1908 as a machinist apprentice for the Atchison, Topeka & Santa Fe, at Newton, Kan., and subsequently served as machinist and roundhouse foreman at various points, advancing to general locomotive foreman at Chanute, Kan., in 1920. In 1923, he entered the services of the Kansas City Southern at Pittsburg, Kan., and served successively as erecting shop foreman, roundhouse foreman, general foreman, and assistant master mechanic, advancing to division master mechanic at

Leonard C. Kirkhuff

Shreveport, La., in 1929. Mr. Kirkhuff went with the Virginian as master mechanic at Elmore, W. Va., in May, 1944, and was promoted to assistant superintendent motive power, Princeton, W. Va., in May, 1945. His recent appointment became effective on **March 1.**

George L. Ernstrom, superintendent of motive power of the Northern Pacific at St. Paul, Minnesota, has been promoted to general mechanical superintendent with the same headquarters succeeding **E. L. Grimm,** who has retired after 45 years of service.

SPECIAL

John J. Fitzpatrick, general attorney of the Chesapeake & Ohio, the New York, Chicago & St. Louis, and the Pere Marquette, with headquarters at Cleveland, Ohio, has been elected chairman of the Traffic Executive Association—Eastern territory and of the Trunk Line Association in New York, effective April 1, succeeding **Edwin H. Burgess,** whose appointment as vice-president and general counsel of the Baltimore & Ohio was reported in the March 2 issue of *Railway Age.*

PURCHASES AND STORES

F. H. Fechtig, purchasing agent of the Atlantic Coast Line, with headquarters at Wilmington, N. C., will retire from service on March 31, after 65 years in railroading and 52 years as A. C. L. purchasing agent. He is 81 years old.

OBITUARY

Hershel L. Main, commerce counsel of the Delaware, Lackawanna & Western, died in Washington, D. C., on March 12.

J. D. Whitmore, who retired in 1941 as assistant general freight traffic manager of the Union Pacific, with headquarters at Omaha, Neb., died recently at his home in Valley, Neb.

John T. McSweeney, assistant general freight agent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, died in a hospital in that city on March 16.

Walter H. Flynn, general superintendent motive power and rolling stock of the New York Central System, at New York, died suddenly on March 14 of a heart attack in his hotel room at Washington, D. C., following attendance at a conference of the Association of American Railroads. Mr. Flynn was born in Buffalo, N. Y., on June 24, 1877, and was a graduate of Michigan State College, with a degree of B. S., in mechanical engineering, in 1899. He began his railway career in September, 1899, in the office of the master mechanic of the Cleveland, Lorain & Wheeling (now the Baltimore & Ohio). He became a draftsman in the mechanical engineer's office of the Michigan Central on September 1, 1900; assistant general foreman at the Jackson (Mich.) locomotive shops on March 1, 1902, and general foreman on February 1, 1905. He became master me-

Walter H. Flynn

chanic at St. Thomas, Ont., on September 1, 1907, and superintendent of motive power at Detroit, Mich., on June 1, 1912. On April 16, 1925, he was appointed superintendent of motive power of the New York Central, Lines East, with headquarters at New York; in September, 1926, general superintendent motive power, New York Central, and in January, 1927, general superintendent motive power and rolling stock, New York Central System. Mr. Flynn had been a member of the Joint Committee of the A. A. R. on Utilization of Locomotives and Conservation of Fuel since 1934. He became a member of the Arbitration Committee, A. A. R., in 1931 and was chairman of that committee from 1933 until 1940. He was elected chairman of the Mechanical division in 1940 and served until his resignation in 1944.

Andrew McCulloch, who retired in 1933 as chief engineer of the Kettle Valley division of the Canadian Pacific (formerly the Kettle River Valley Railway), at Penticton, B. C., died there recently, at the age of 81 years.

William V. Kibbe, who retired as general Eastern passenger agent of the Pennsylvania at New York in 1929, after 53 years with the railroad, died at New Brunswick, N. J., on March 14, at the age of 86.

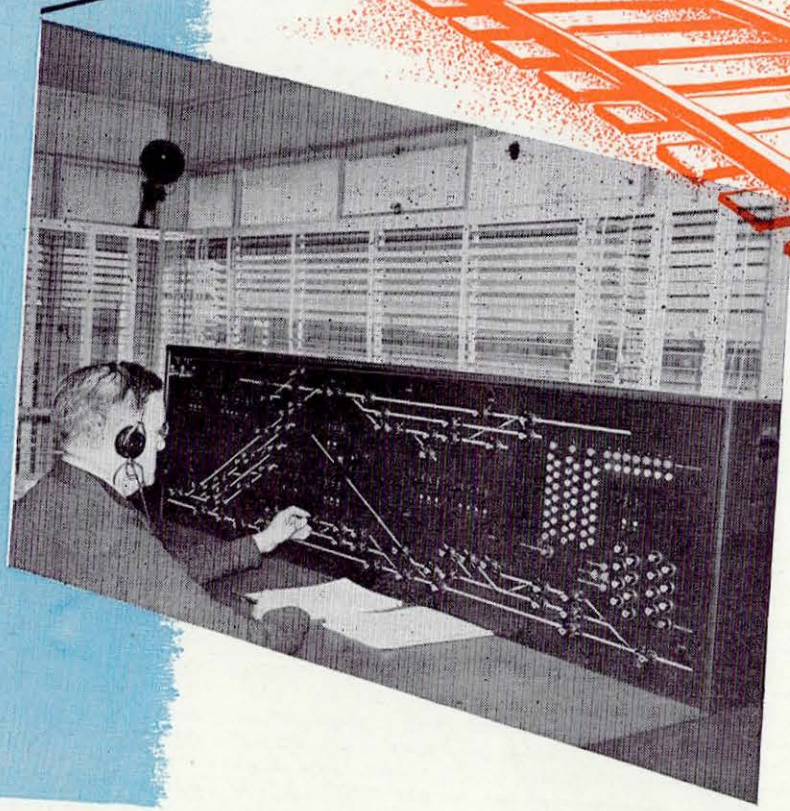
Morris S. Hawkins, president of the Norfolk Southern and the Norfolk & Portsmouth Belt Line, with headquarters at Norfolk, Va., was accidentally killed by a stray bullet while walking near his home in Norfolk on the afternoon of March 14. Mr. Hawkins was 64 years of age.

Roy D. Garner, whose death on March 9, the day after he retired as general manager and chief engineer of the Central Vermont (part of the Canadian National), was reported in the March 16 issue of *Railway Age,* was born at Waverly, Iowa, on January 15, 1885, and attended Iowa State College. He began his railway career as a chainman for the Chicago Great Western during vacations in 1902 and 1903, and entered regular service as transitman and resident engineer of the Minneapolis, St. Paul & Sault Ste. Marie in 1904, then joined the Minneapolis & St. Louis in the same capacity in 1905. He went with the Grand Trunk as assistant engineer at Buffalo, N. Y., in 1907, and in 1913 was appointed engineer for the Southern New England (a subsidiary of the Central Vermont), and became chief engineer for the Central Vermont in 1930. Mr. Garner was promoted to general manager and chief engineer in 1944.

RAILWAY TIME carried a special and complicated meaning in the early years of the nineteenth century, when the famous "Irish Mail" of the London Midland & Scottish daily and literally conveyed officially time to the Kingstown-Holyhead ferry.

Each day before the train pulled out of London, a messenger from the Admiralty handed to the conductor a heavy leather case containing a huge watch carefully set to the split second. At Holyhead officials of the Irish Channel ferry checked their clocks and the watch was returned by the next train to London, there to be reset at the Admiralty office in preparation for its next journey. And though telegraph, telephone, electric synchronization and radio signals came to dispense the correct time at frequent intervals, the old watch continued to travel the Irish Mail down through the years—until in 1940 more urgent war operations sent it into retirement.

Clearing the way



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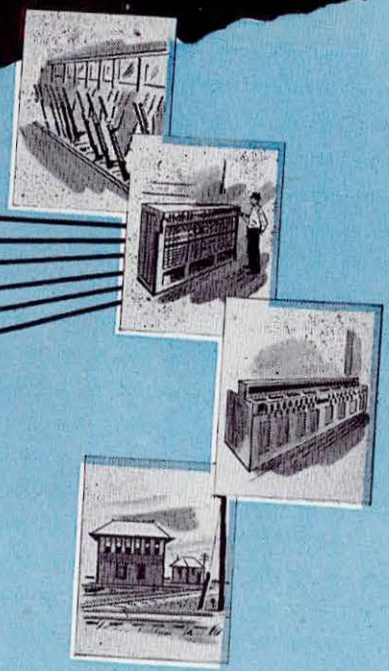

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A-2102

Adjustment Board Decisions

Among the decisions handed down by the National Railroad Adjustment Board are the following:

In *Award No. 10691, Docket No. 19636,* the *B. of L. F. and E.* claimed payment from the *Chicago, Milwaukee, St. Paul & Pacific* for a fireman, amounting to pay for a minimum day of 100 miles plus 12 constructive miles because the fireman was required to cut a locomotive off the work train to which it was assigned and help another train for a distance of 8 mi., following which work train service was resumed. Payment for the actual mileage run in assisting the other train was made. *Referee Curtis W. Roll* denied the claim.

In *Erie vs. B. of L. E. and B. of L. F. and E., Award No. 10680, Docket No. 19571, Curtis W. Roll, Referee,* the board denied the claim of an engine crew for one additional day's pay at freight rates, resulting from a work train's being required to move 80 empty hopper cars between two intermediate stations, while en route to its assigned terminal to tie-up. The board found that the employees were properly compensated under a rule governing the performance of two classes of service on a single trip and that a second trip could not begin until the designated tie-up point was reached and the crew released.

Referee Curtis W. Roll sustained a claim for three days' pay at yard rates for a road conductor who was required to perform switching at Milledgeville, Ga., during the hours that a single-trick switch engine was off-duty, upholding the contention of the employees that yard work at Milledgeville was the exclusive right of yardmen. *(Georgia R. R. vs. O. R. C., Award No. 10684, Docket No. 19617).* In another case involving the same disputants and the same referee, the employee's claim for the local freight rate of pay instead of the through freight rate because the employee was required to switch five cars of gasoline back into the train away from engine was upheld. These cars had been placed in the train at the initial terminal next behind cars that were to be set out en route and, if not switched back into the train after the final set-out had been made, would have been handled in a manner in violation of federal law and of the carrier's own rules. *(Award No. 10685, Docket No. 19640).*

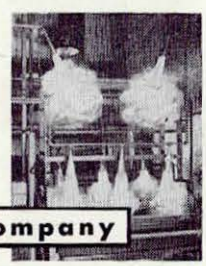
In a dispute between the *Illinois Central* and the *B. of L. F. and E. (Award No. 10616, Docket No. 19341), Referee Sidney St. F. Thaxter,* held that a fireman who was dismissed for violation of certain rules of the transportation department, including an altercation with the trainmaster, be reinstated with full pay for the time lost and without regard to earnings in other employment. The award was based on the grounds that the trainmaster who was involved in the dispute conducted the investigation, presented the charges and assessed discipline, a procedure which the referee felt was unfair. He also held that the facts that the claim was not presented until nine months after the date of discharge; that the discharged employee had not, during the course of the investigation leading to his dismissal, objected to the procedure; and that two months after dismissal the employee obtained employment as an engineer of another carrier, were of no consequence.

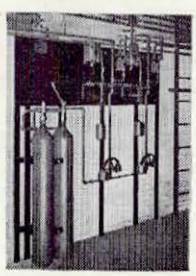
Consider these questions for a moment: If you have vaults for filing tracings, blue prints or other valuable records; storage spaces where highly flammable liquids and chemicals are kept; bake ovens, dip tanks, spray booths, and electrical equipment—and a serious fire occurs, how long would you be out of production? How much damage would irreplaceable records and other materials suffer from improper extinguishing agents or methods? If the answers suggest a survey of your present fire protection then consider these facts:

C-O-TWO smoke detecting combined with fire extinguishing is new—modern. The slightest trace of smoke is detected instantly. This new C-O-TWO protection is not dependent upon heat. It operates instantly on the detection of smoke. C-O-TWO pressure release will automatically close doors and windows—isolating a fire. Dry sub-zero carbon dioxide gas from a C-O-TWO built-in system will extinguish a fire in seconds without damage to materials or machinery.

Portable extinguishers including the famous C-O-TWO Squeez-Grip valve—wheeled units or hose reel types, afford additional protection against incipient fires. All employ carbon dioxide, the fastest non-damaging fire extinguishing agent. C-O-TWO engineers will help you plan modern fire protection. Write for information.

C-O-TWO Detects Smoke . . . Kills Fire Saves Lives . . . It's Fast . . . It's Modern



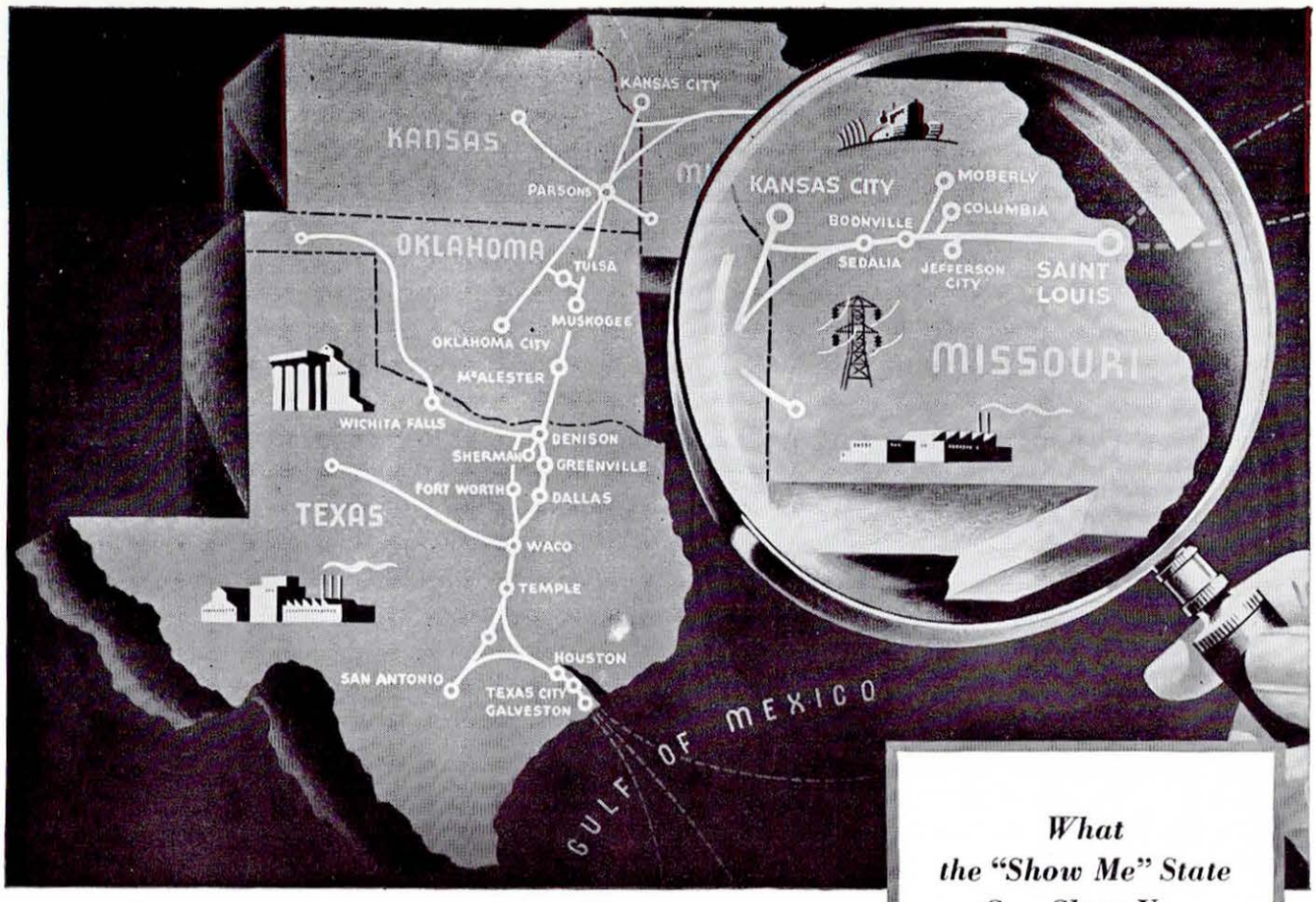


C-O-TWO fire equipment company

Newark 1, New Jersey

AFFILIATED WITH PYRENE MANUFACTURING COMPANY

Sales and Service in the Principal Cities of the U. S. and Canada



Where Business Heroes are made

The Southwest offers you an opportunity to become a business hero! For as you take the initiative in investigating and advocating the attractive profit possibilities of a plant or branch in this rapidly expanding area, you are sure to win the admiration of your firm.

The Southwest's pioneer railroad, the KATY, is ready to assist you in your investigation of this strategic corridor . . . ready to submit essential data on its vast and varied resources . . . ready to furnish helpful information on its abundant reserves of raw materials, minerals, water, power, fuel. For here is a land offering every opportunity for commercial expansion . . . a bustling land where markets, materials and manpower meet . . . peopled by wholesome, vigorous Americans who are able, progressive, ambitious, and sympathetic partners to industrial development.

Because the Katy is a compact, closely-knit, Class 1 Railroad, devoted exclusively to the service and development of its Southwestern corridor, it is in a unique position to recommend appropriate plant sites, and to furnish other timely data on this highly-favored region, quickly and in confidence.

Write Industrial Development Dept., Missouri-Kansas-Texas Lines, St. Louis 1, Mo., or Katy Bldg., Dallas 2, Texas.

When you Travel or Ship Southwest, remember Katy

308

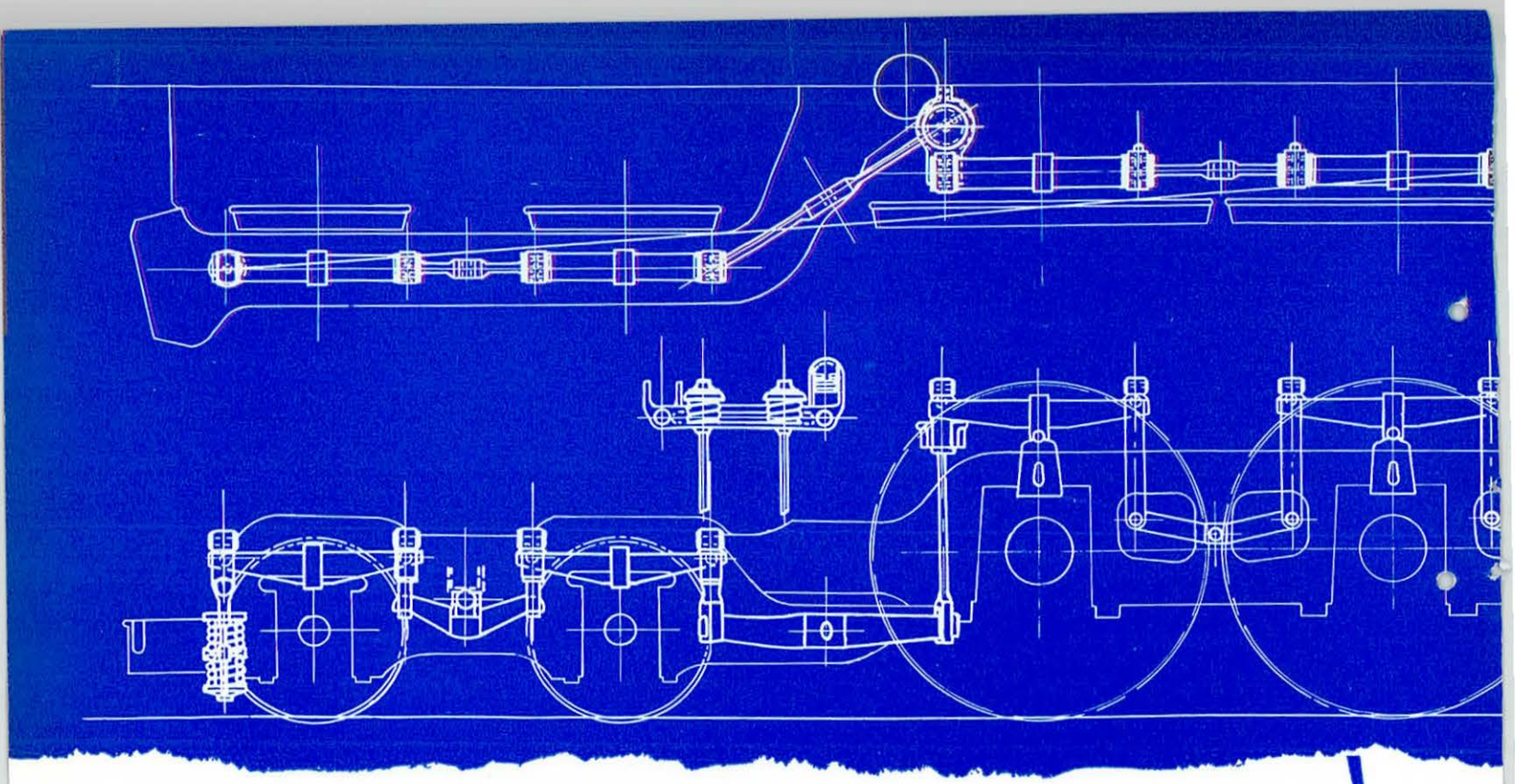
MISSOURI-KANSAS-TEXAS RAILROAD SYSTEM

What the "Show Me" State Can Show You

Larger in area than any state east of the Mississippi, Missouri offers industry its vast reserves of talented native labor, low-cost hydro-electric power, abundant coal and all the minerals and agricultural products with which the state abounds, plus ready access to the huge St. Louis and Kansas City trade areas and to U. S. and world markets through the Katy's St. Louis and Kansas City gateways and Gulf outlets.

For a "show down" of the "Show Me" State, send for free booklet "The Industrial Southwest," packed with interesting data on population, housing, climate, native resources and industrial opportunities in Missouri and other Katy-served trading areas which offer outstanding opportunities for peacetime industrial prosperity.

M-K-T Katy Lines



ALCO Spring Suspension and ALCO Tires

A FEATURE OF

"ALCO Balanced Power!"

in the New York Central's Record-Breaking "Niagara"

THE modern concept and application of the "lever principle" to the spring-suspension system and lateral-motion control device in steam-locomotive design are largely an ALCO development. Coordinated with other factors of ALCO BALANCED POWER, this principle plays an important part in the performance of the "Niagara."

American Locomotive Spring Division's extensive engineering and shop facilities afforded special handling of the Niagara's difficult spring-suspension problems at all stages of design, selection of steels, fabrication, heat treating, and assembly.

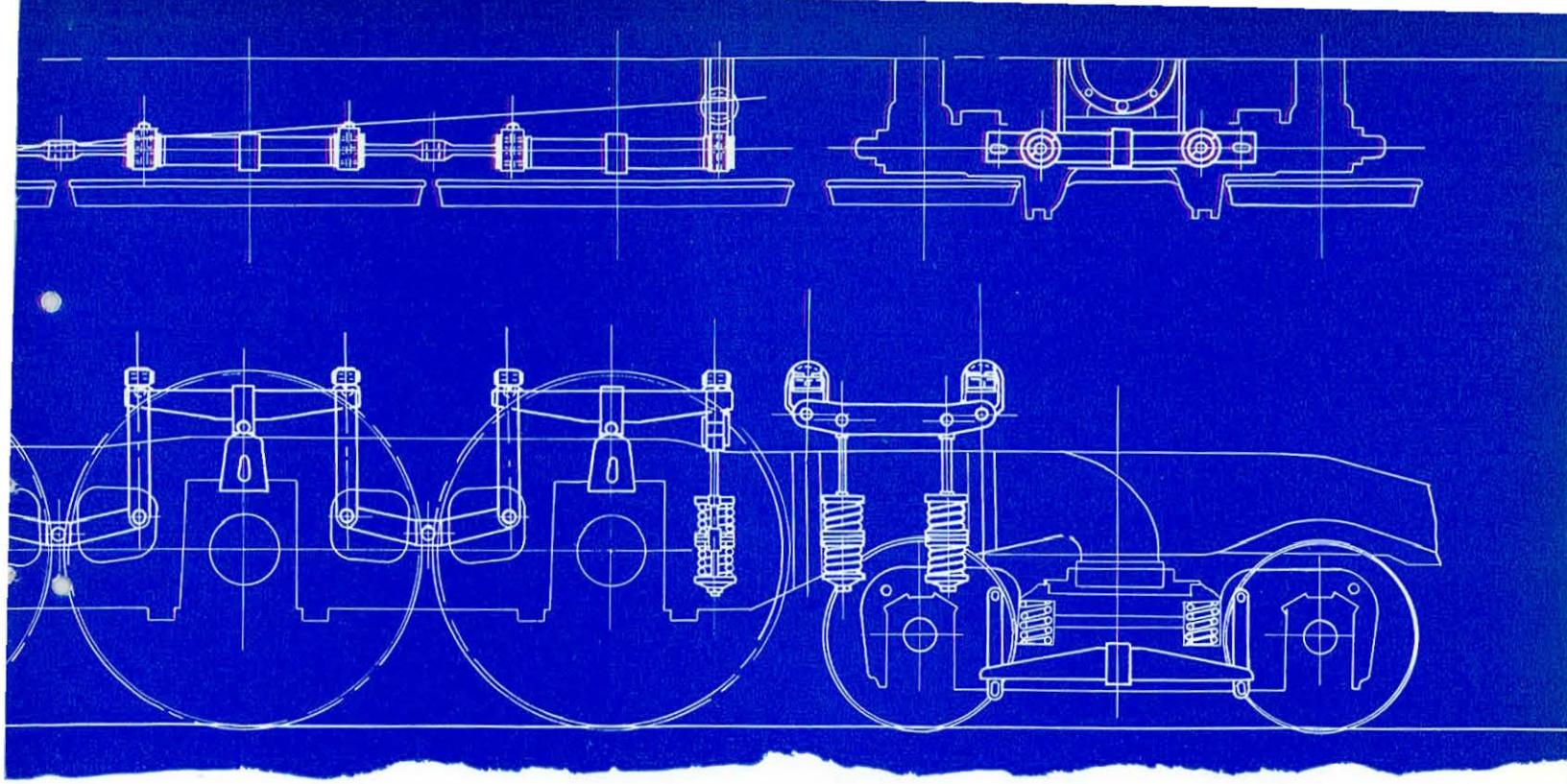
Special ALCO skills and facilities produced the long-lived tires necessary to the Niagara's requirements.

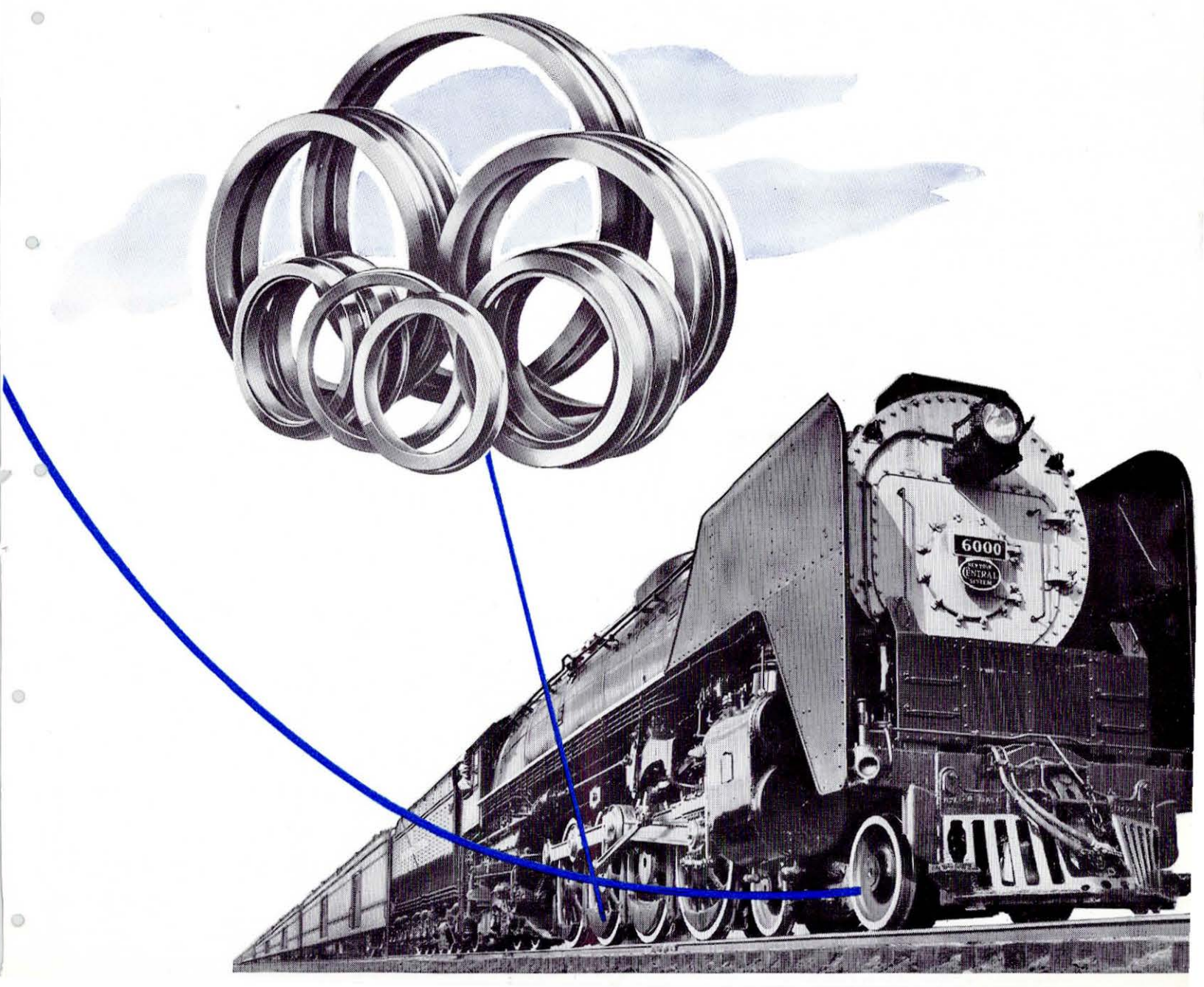
An outstanding product of ALCO specialization, coordination, and cooperation, the "Niagara" hauls fast passenger trains or heavy fast freight, interchangeably, without loss of efficiency in either service.

American Locomotive

Alco

THE MARK OF MODERN LOCOMOTION



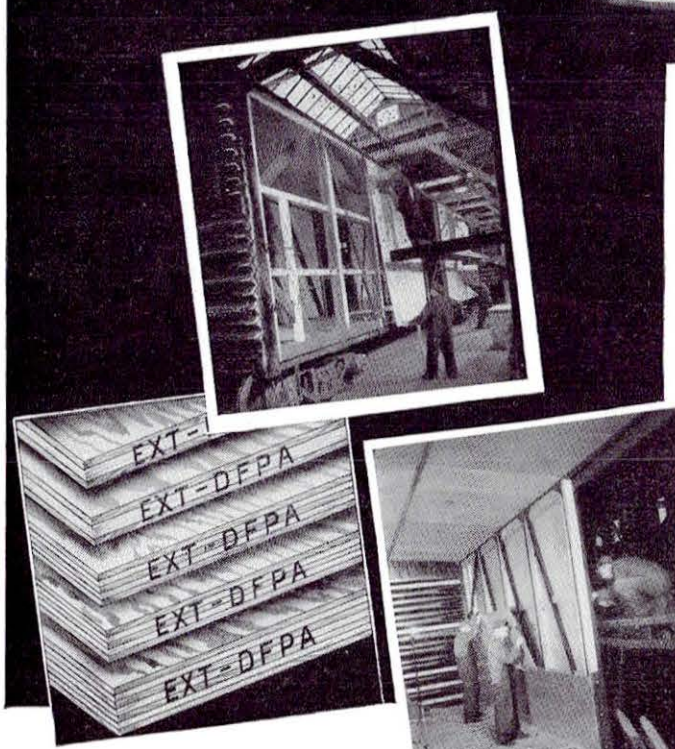

6000
NEW YORK CENTRAL SYSTEM

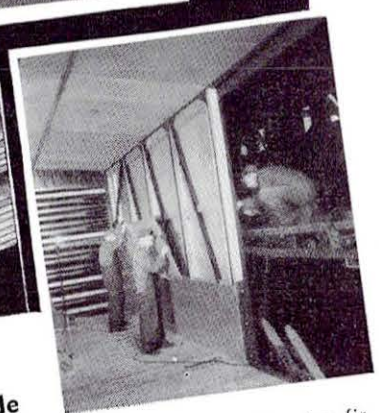
Exterior Type *Douglas Fir* PLYWOOD

(Made with Completely-Waterproof Binder)

— *laboratory tested for weatherproof qualities*

• Just a month in this "Weather-O-Meter" produces the effect of a year of sun and rain on finishes for Douglas Fir Plywood These tests—carried on in the Douglas Fir Plywood Association laboratory—augment findings from test exposure fences in climatically different parts of the country, and from actual uses all over the world. This research laboratory tests more than 150,000 Plywood samples each year, in addition to developing new products and new uses.





Always Look for The EXT-DFPA "Grade Trade-Mark"

• Exterior type Douglas fir plywood is made with completely waterproof synthetic resin binder especially for permanent exposure to weather and water. It must be specified for all exterior applications, for interior use where moisture conditions are abnormal. Every panel carries the EXT-DFPA "grade trade-mark" —your assurance of thoroughly tested weatherproof qualities!

• Exterior type Douglas fir plywood provides a tight, durable, weatherproof siding for 50-ton Great Northern box cars (top inset). Tests proved the cars sturdy, durable and much lighter than conventional cars. Plywood was used for interior sheathing, too (bottom inset). The large panels speed construction and reduce costs — are split-proof, puncture-proof, light in weight and easy for workmen to handle.

Railroads, too, have proved Exterior Plywood's durability

• Not only laboratory-tested—but thoroughly proven in actual use—Exterior type Douglas fir plywood is one of the most versatile materials for railroad construction. It is strong and durable — **engineered** for strength. It is made with completely waterproof synthetic resin binder especially for permanent exposure to weather, water and all abnormal moisture conditions.

• Exterior type plywood makes possible tighter, stronger, lighter construction when used in cabooses, box cars and reefers. Thousands of such cars are today providing exceptional service on scores of lines. Plywood has many general construction applications, too — in depots, freight sheds, maintenance buildings and warehouses.

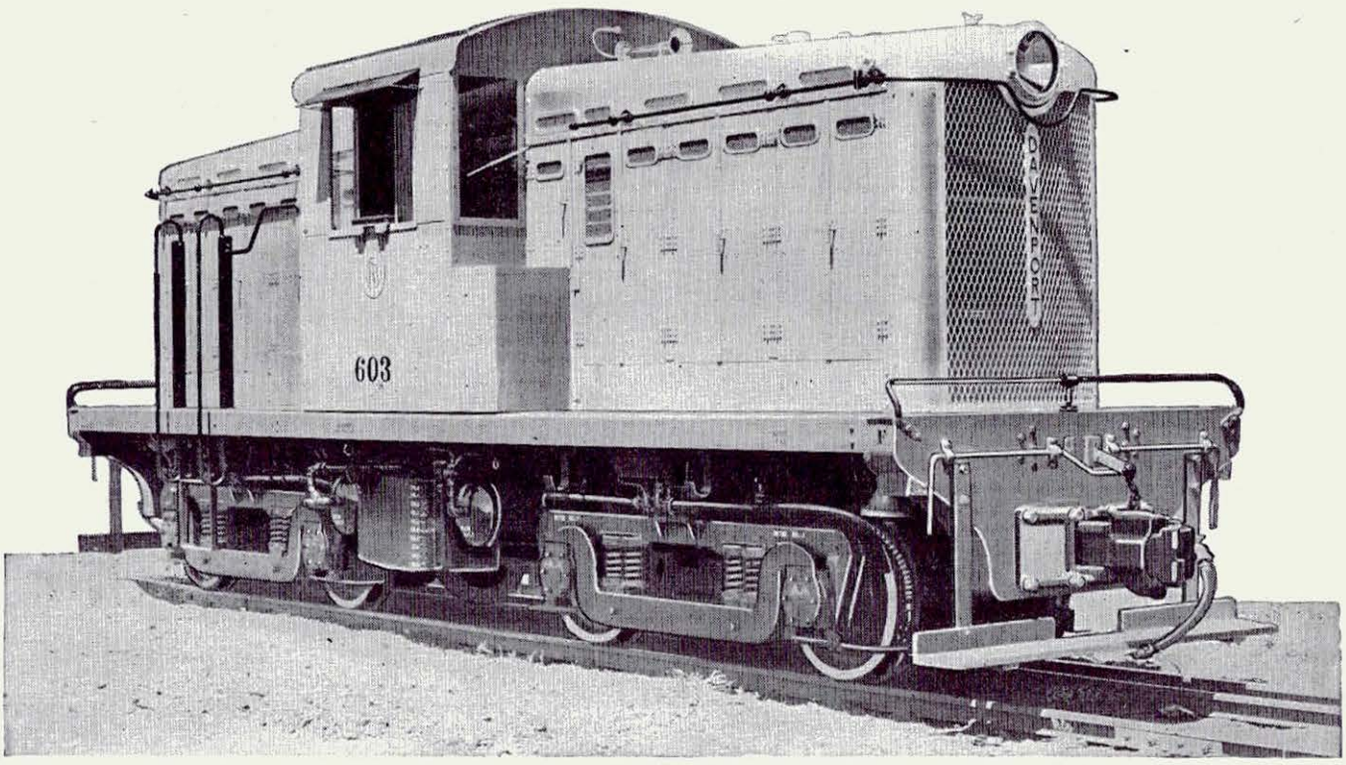
• Douglas Fir Plywood Association engineers will be glad to work with you in solving specific construction problems through the use of this strong, rigid, durable material. Write or wire.

Douglas Fir Plywood Association

Tacoma 2, Washington

FOR PRICES AND DELIVERY INFORMATION SEE YOUR SOURCE OF SUPPLY

A SYMPTOM *and a* CURE



A 44-Ton Davenport Diesel-Electric Switcher of a type now setting performance records for switching and branch line service.

DAVENPORT
LIGHTER DIESEL
SWITCHERS

Pay Their Own Way Through

LOWER FUEL COSTS
•
CHEAPER MAINTENANCE
•
FEWER MAN HOURS
•
100% AVAILABILITY
•
NO ASH PITS OR WATER FACILITIES
•
NO WASTE THROUGH OVER-POWER
•
NO ROUNDHOUSE
•
SMOKE-FREE AND QUIET
•
SAFER FOR MEN, LADING AND ROLLING STOCK

WASTE through OVER-POWER, on hundreds of traffic locations that CAN BE served better and more economically, is a symptom of unintentional but real EXTRAVAGANCE.

Many steam switchers and heavy Diesels are in use where the traffic load could be handled BETTER and with SUBSTANTIAL SAVINGS by smaller and more efficient Power Units. The overall drag on railroad economy through the WASTE of OVER-POWER is considerable—and the time approaches when profit-minded executives will demand a remedy.

The positive CURE is the adoption of 44-Ton Davenport Diesel-Electric and 30-Ton Davenport Diesel-Mechanical Power Units. The proof rests on their economy record of scores of operations.

Here is a constructive potential worth a thorough investigation.

Complete Information on Request

DAVENPORT LOCOMOTIVE WORKS

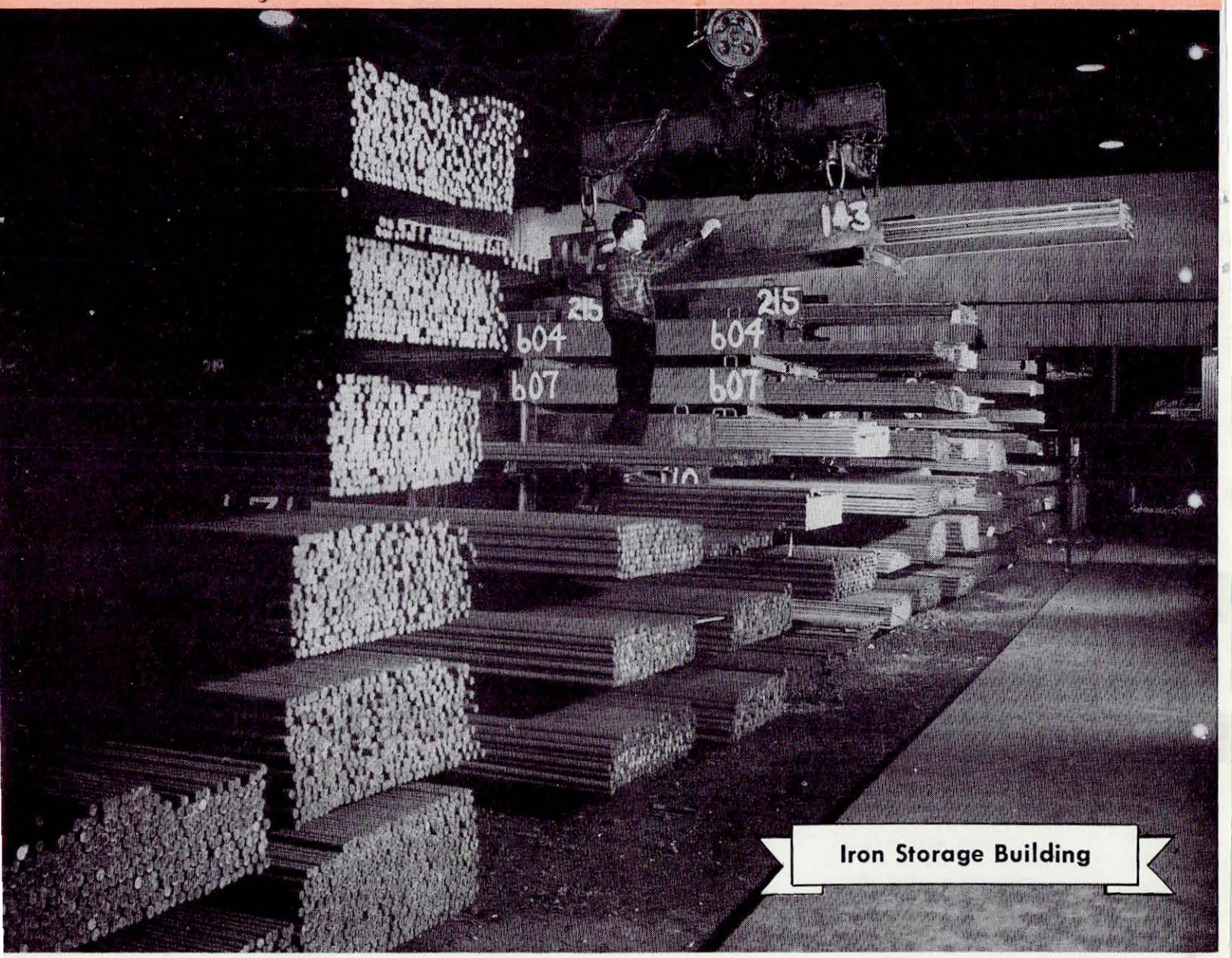
A DIVISION OF DAVENPORT BESLER CORPORATION

DAVENPORT, IOWA, U. S. A.

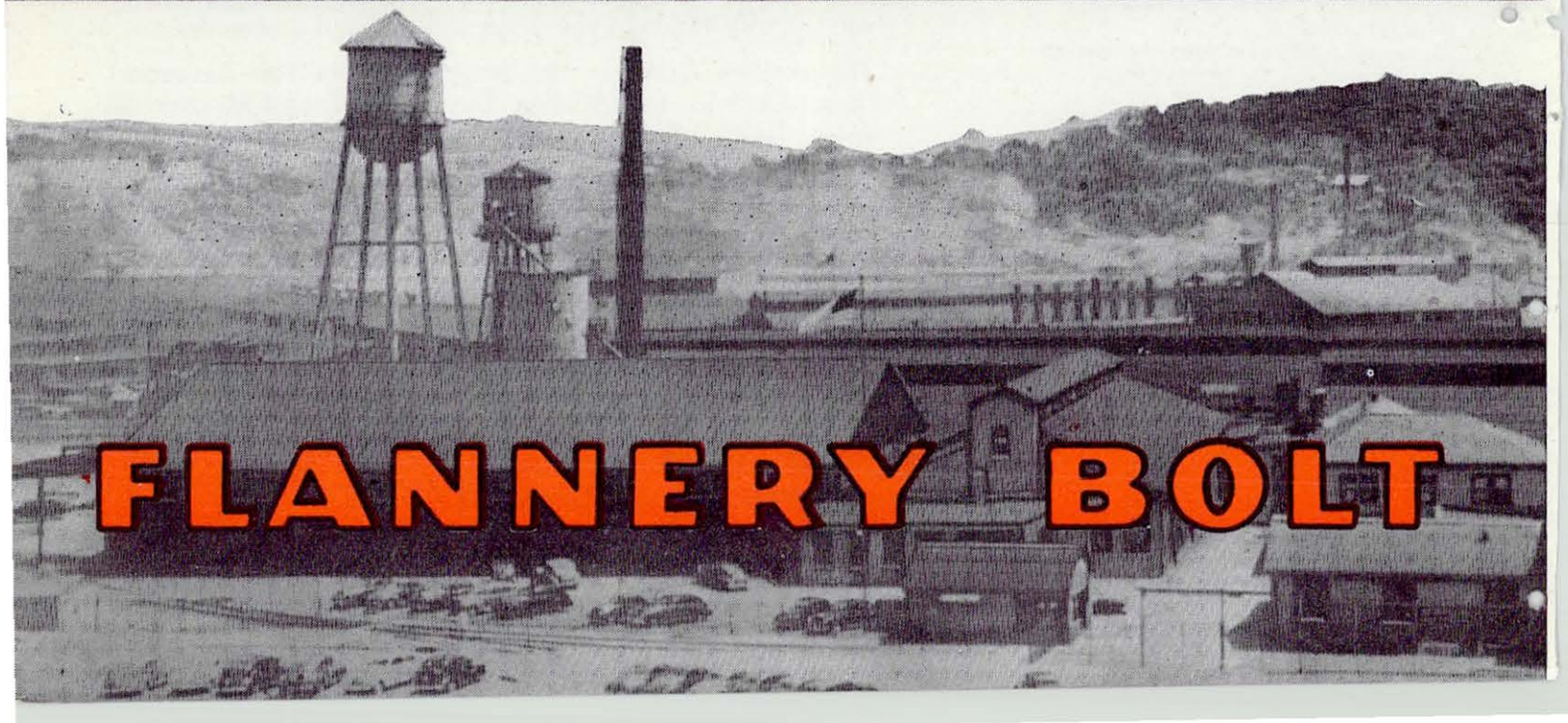
Pioneers of the Lighter Diesel Switchers

EXPORT OFFICE • BROWN & SITES CO. INC., 52 CHURCH ST., NEW YORK • CABLE ADDRESS "BROSITES"

The Heritage of Quality



Iron Storage Building

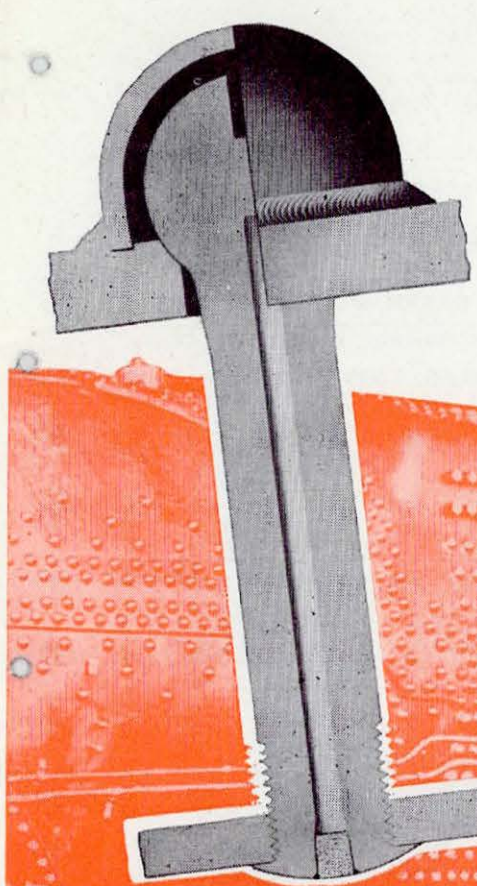


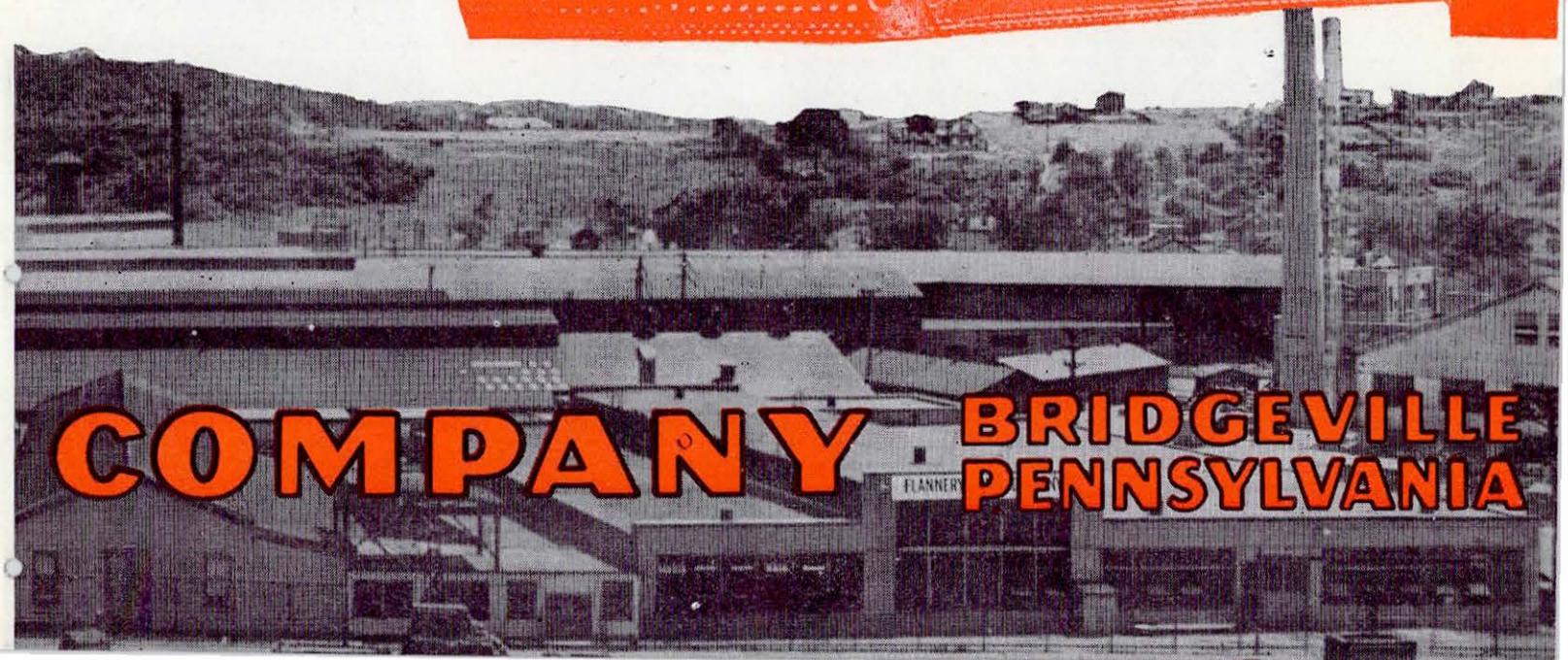
FLANNERY BOLT

HOLLOW *flexible* STAYBOLTS

FLANNERY BOLT COMPANY will present a pictorial study of the manufacture of Hollow Flexible Staybolts, beginning with this issue and continuing for the next few months.

The first of a series of departmental photographs shows a section of Flannery's Iron Storage Building, where staybolt iron is meticulously stored in numbered racks according to brands and sizes, which assures our customers that they receive staybolts manufactured from the particular brand of staybolt iron specified by them.





$81,602,000

Union Pacific Railroad Company

Refunding Mortgage Bonds, Series C, 2½%

To be dated March 1, 1946 — To be due March 1, 1991

The issuance and sale of these Bonds are subject to authorization by the Interstate Commerce Commission

In the opinion of Counsel, the Bonds will be legal investments for savings banks organized under the laws of the States of California, Maine, Massachusetts, New Hampshire, New Jersey, New York, Ohio and Rhode Island, and for savings banks organized under the general laws of Pennsylvania.

Price 102.19% and accrued interest

The Offering Circular may be obtained in any State in which this announcement is circulated from only such of the undersigned and other dealers as may lawfully offer these securities in such State.

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BEAR, STEARNS & CO. — OTIS & CO. (INCORPORATED) — R. W. PRESSPRICH & CO. — E. H. ROLLINS & SONS INCORPORATED — BLAIR & CO., INC.

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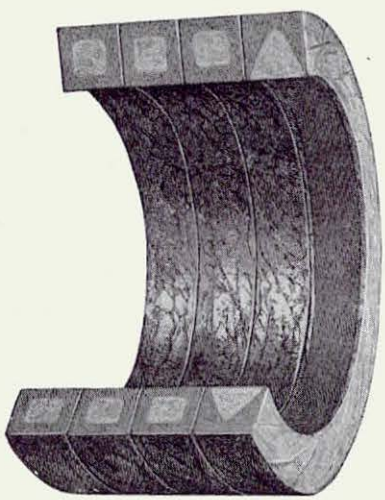
The Bonds are offered when, as and if issued and subject to acceptance by the Purchasers, to approval of counsel, to prior sale, to withdrawal, cancellation or modification of the offer without notice, and to authorization by the Interstate Commerce Commission of their issuance and sale. It is expected that Bonds in temporary form will be available for delivery on or about March 29, 1946, at the office of Halsey, Stuart & Co. Inc., 35 Wall Street, New York 5, N. Y.

March 14, 1946.

DURAMETALLIC Expansion Joint Packing

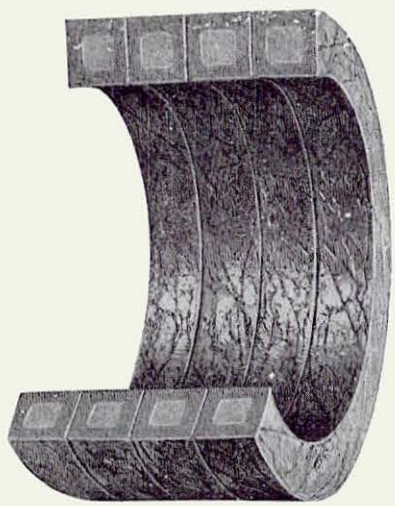


CROSS SECTION OF DURAMETALLIC STLYE D-114

Shopping to Shopping Service on Saturated and Superheated Steam

FOR LONG UNINTERRUPTED SERVICE on locomotive expansion joints — specify Durametallic . . . an anti-frictional, flexible metallic packing with resilient core that insures a free working joint.

WRITE FOR ILLUSTRATED BULLETIN AND PRICES



DURAMETALLIC EXPANSION JOINT PACKING — STYLE D-110

The PERFECT SEAL

DURAMETALLIC CORPORATION

KALAMAZOO MICHIGAN

Manufacturers of PACKINGS for — AIR PUMPS • STOKERS • EXPANSION JOINTS • CAB COCKS WATER GAGE GLASS • FEED WATER PUMPS • VALVE STEMS • REVERSE GEARS AND DURA HOOK PACKING PULLERS

Yoloy EXCELS IN CORROSION RESISTANCE

1

Corrosion- in Ocean Beach Atmosphere

Small panels of nickel copper steels and two commercial steels 3" x 5" x 0.020" thick were mounted vertically in a wooden rack on a remote section of New Jersey ocean beach. The time elapsed to the first perforation is given below:

Material	Life to First Perforation -- Years
Ingot Iron (0.04% C)	1.5
Steel (0.07% C, 0.17% Cu)	1.5
Steel (0.07% C, 0.61% Cu, 1.39% Ni)	Over 5
Steel (0.11% C, 1.18% Cu. 2.76% Ni)	Over 5

2

Corrosion- Submerged in Inland River Water

A number of high tensile steels were included in a test conducted by the U. S. Engineers in the Allegheny River near Pittsburgh. Specimens were totally immersed for 300 days. These data are cited since this river is considered to be representative of waters in industrial regions above tidewater.

Material	Date N.N.D.*	in./yr.
Mild Steel	19.2	0.0035
.27 Cu Steel	17.1	0.0031
2.0 Ni, 1.0 Cu Steel	16.0	0.0029

*(Milligrams per square decimeter per day)

3

Corrosion - in Coal Car Service

In coal car service after approximately six years, the relative corrosion rates based on loss in weight was 1.0 for nickel copper steel, 1.73 for copper steel (.25% minimum copper) and 2.15 for mild carbon steel. Subsequent reports after twelve year service indicated that both the carbon and copper bearing steel had to be replaced while the nickel copper steel was still in service and still had considerable service life remaining.

These test data are as reported in "Nickel Steel Topics," June, 1945

HERE are cited the results from a few corrosion tests made on a wide variety of steels. In each instance, Yoloy type steel (copper-nickel alloy) demonstrated a lower corrosion rate than other steels tested.

That these tests are typical is demonstrated by the outstanding performance of Yoloy steel in literally thousands of installations where it must stand up under highly corrosive conditions.

Yoloy is Youngstown's low-alloy, high-strength, nickel-copper steel. In addition to its proven ability to resist corrosion, Yoloy shows an amazing resistance to impact, shock, vibration and abrasion. Due to its greater strength, use of this steel permits lighter weight construction, with consequent weight saving of as much as 20% to 25%.

Yoloy is now available in sheets, plates, bars, rods and tubing. For complete information on Yoloy's suitability and performance in *your* type of service, write, wire or phone our nearest branch office.

QUALITY YOUNGSTOWN SERVICE

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

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Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

Sheets-Pipe and Tubular Products - Plates - Conduit-Bars-Coke Tin Plate-Electrolytic Tin Plate-Rods-Wire-Nails-Tie Plates and Spikes.

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Our New Service

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Operation

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1—Westinghouse, 2-Unit, 87-Ton, 600 H.P. Diesel Electric. Built 1928. Tractive Effort 52.200 lbs.

1—70 Ton, 0-6-0, Switcher, I. C. C. Condition.

1—10-Ton, Davenport Besler, Diesel. 8000 lbs. Tractive Effort.

1—70 ton, 0-6-0 Switcher, I.C.C. Condition.

All above locomotives have been repaired and are in good operating condition!

Other Diesel & Steam Locomotives Too!

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IRON & STEEL PRODUCTS, Inc.

41 years' experience

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CHICAGO 33, ILLINOIS

"ANYTHING containing IRON or STEEL"

How could YOUR OWN tank cars?

Reduce your Costs?
Save you Labor?
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Improve your Operations?
Increase your Profits?

? ? ? ?

We have just purchased several hundred good used cars right out of service.

These Are Available to You at Close to Pre-War Prices!

Request our prices—"if just out of curiosity"—because there is no obligation.

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41 years' experience

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Salesman. Opening for man familiar with construction machinery and its application, with knowledge of railroad procedure. Excellent proposition for man of desired qualifications. Submit written application. All replies will be treated in confidence. Rozier - Ryan Company, 3340 Morganford Road, St. Louis, Missouri.

SAVE

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Railway Equipment

—New Spikes and Bolts— Relaying Rails and Angle Bars

Good used tie plates, anti rail creepers and other railway supplies and equipment.

SONKEN-GALAMBA

Corporation

KANSAS CITY 16, KANS.

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Railway Maintenance Equipment

2 Adzing Machines, Nordberg Mfg. Co., New 1945
3 Motor Cars, Fairbanks Morse Co., Sheffield 40-B, New 1945
3 Push Cars, Fairbanks Morse Co., No. 35, New 1945
2 Rail Cutting Machines, Racine No. 15, New 1945
2 Track Wrenches, Nordberg Mfg. Co., with drilling attachments, New 1945
1 Track Jack, Nordberg Mfg. Co., Power Hydraulic, Used 1946
2 Spike Pullers, Nordberg Mfg. Co., New 1945
3 Spike Drivers, Chicago Pneumatic CP-117, New 1945
2 Spike Drivers, Independent Pneumatic, New 1945
4 Electric Tie Tampers, Electric Tamper & Equipment Co., "Jackson" WS4-4S, New 1945

The above equipment is in excellent condition, having been used for only a few months on one contract.

Also have for sale:

1 Locomotive, Std. Gauge, 65 Ton Steam, oil burner, built by Baldwin Locomotive Co. 1906. Completely overhauled 1945. Now in good condition.

THE KERSHAW COMPANY, INC.

P. O. BOX 510

MONTGOMERY, ALABAMA

FREIGHT CARS

IMMEDIATE DELIVERY

14—Gondola, All Steel, 50-Ton,
8—Dump, Western, 50 Cu. Yd., 70 Ton, Drop Doors.
54—Dump, Western, 20 Cu. Yd., 40 and 50-Ton Lift Doors.
29—Dump, Western, 20 Cu. Yd., 50-Ton, Lift Doors.
200—Hopper, Twin, 50-Ton.
77—Hopper, Side Discharge, 50-Ton.
7—Box, 50-Ft., 50-Ton, Steel.
100—Tank, 8000 and 10,000 Gal.

IRON & STEEL PRODUCTS, INC.

41 years' experience

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Wanted—Associate Editor

A man with technical training and some experience in the engineering or maintenance of way department of a steam railway, preferably in both departments. Must demonstrate his ability to write English clearly and concisely. Editorial experience unnecessary. This position has a future for the right man. Address Railway Engineering and Maintenance, 105 W. Adams St., Chicago 3, Ill.

JOBS WANTED

Large group experienced foreign track men with camp equipment, working on track over 20 years looking for work. Best reference.

MARIO F. MANCUSO
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New York City

Phone GRamercy 7-8575

TIE PLATES

500 Tons of good, serviceable used tie plates, ready for immediate shipment. Also 1,000 tons of 90# relaying rail.

Address: M. K. FRANK, 480 Lexington Avenue, New York 17, N. Y. Park Building, Pittsburgh, Pa. Blitz Building, Reno, Nevada.

POSITION WANTED

Recent graduate Mechanical Engineer, B.A.Sc. degree, from outstanding College, age twenty-four, single. Desires position with progressive Company manufacturing Railway Equipment. Address Box 797, Railway Age, 30 Church St., New York 7, N. Y.

HELP WANTED

Appraiser of Railway Equipment wanted. State experience. Conditions of employment. Address Box 796, Railway Age, 30 Church Street, New York 7, N. Y.

POSITION WANTED

Railroad — Marine Department Executive handle full department, Passenger-Freight. Now attached Official Staff. Desire broader field, greater opportunities. Address Box 795, Railway Age, 30 Church Street, New York 7, N. Y.

POSITION WANTED

Maintenance of Way Engineer, age 38, married, University graduate in Civil Engineering, desires permanent position with small railroad company or corporation operating a railroad. Twelve years experience with large railroad in direct charge of maintenance and construction. Fully qualified to serve in an executive engineering capacity. Address box 794, Railway Age, 30 Church Street, New York 7, N. Y.

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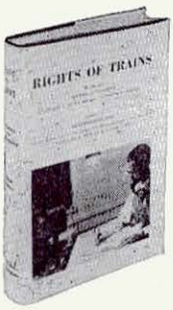
RIGHTS OF TRAINS

By the late Harry W. Forman
Revised by Peter Josserand

Associate Editor, The Train Dispatcher



A complete analysis of the Standard Code rules in the form of lectures, followed by questions and answers. The Standard Code is explained paragraph by paragraph, with the reasons for each rule given. Deviations from the Standard Code by various roads having special traffic conditions are cited. Supplements the Book of Rules given operating men by most roads. Space in the back is given for pasting in special rules on any road to make it an individualized copy.

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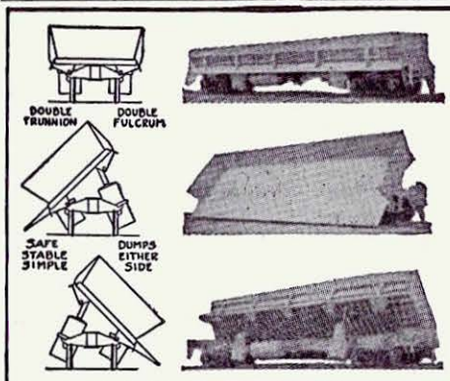

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